```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-progessing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                         ő
                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-359-426C-2
81
1 XEEKTPLTTAAXADV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908470 seqs, 133250620 residues
  544.3
544.3
554.3
554.3
554.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              XEEKTPLTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1994.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1995.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1995.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1997.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT: *
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1992.DAT:*
                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                         ВВ
                                                                                                                                                                                                                                                                         ö
  AAW64480
AAB69062
AAG30090
ABB52865
AAB67588
AAB67588
AAG30089
AAG43603
AAG43603
                                                                                                                                                                                                                                                                                                                                                SUMMARIES
Arabidopsis thalia Escherichia coli p
Amino acid sequenc
Arabidopsis thalia
Arabidopsis thalia
Arabidopsis thalia
                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                    Pseudomonas aerugi
Arabidopsis thalia
                                                                                                                                                                                                                    P. aeruginosa prot
```

Amino acid sequenc	AAY54315	21	500	45.7	37	
Amino acid sequenc	AAY54314	21	500	45.7	37	
Amino acid seque	AAY54313	21	498	45.7	37	
Capsicum a	AAW06454	18	498	45.7	37	
. Consensus sequer	AAY54289	21	456	45.7	37	
Novel	ABG01280	22	440	45.7	37	
Strept	ABP28665	23	396	45.7	37	
Novel	ABG01028	22	358	45.7	37	
Human polypeptide,	AAM93916	22	326	45.7	37	
Arabidopsis thalia	AAG05456	21	243	5	37	
Arabidopsis	AAG18092	21	120		37	
	AAU27612	22	19	5	37	
Aldehyde-deh	AAR63672	15	521	6.	38	
	AAR07361	11	307	6	38	
Novel human I	AAU18229	22	277	6.	38	
C glutamicum	AAG91455	22	261	6.	38	
Human lung can	AAU81227	23	229	σ,	38	
Double strand	ABB81876	23	229	5	38	
Human prote	AAB94775	22	229	5	38	
Drosophila me	ABB71511	22	225	6	<b>(4)</b>	
	ABB67966	22	842	47.5	38.5	
Murine normal SPAS	AAE22283	23	395	œ	39	
Murine tumour	AAE22282	23	395		39	
Murine SPAS-1	AAE22281	23	321	80	39	
C glutamicum	AAG91909	22	233	œ •	39	
NC	ABG26339	22	137	8	39	
Arabidopsis	AAG39690	21	128	<b>в</b>	39	
Drosophila	ABB59613	22	1793	8	39.5	
Drosophila	ABB68024	22	47	9	40	
Drosophila melanc	ABB60583	22	788		40	
HIV isolate 518	AAW93076	20	498		40	
HIV-type vi	AAR51691	15	498	49.4	40	
Klebsiell	AAU36108	22	4		40	
Listeria mc	ABB48482	23	258	49.4	40	
Drosophila melanog	ABB66926	22	⊣	50.6	41	

## ALIGNMENTS

AAW64480 standard; peptide; 19

₹

AAW64480;

20-OCT-1998 (first entry)

RESULT 1
AAW64480
ID AAW64480
XX
XX
XX
AAC AAW6
XX
AAW648
AA Misc-difference Misc-difference Misc-difference Antigen; Pa60; diagnosis; detection; cystic fibrosis; vaccine; immunogen; infection; treatment. P. aeruginosa protein antigen Pa60 N-terminal peptide fragment W09832769-A1 Pseudomonas aeruginosa 24-JAN-1997; (AUSP-) AUSPHARM INT LTD (CHAP/) CHAPMAN P W. 26-JAN-1998; 97GB-0001489 98WO-GB00217 /label= unknown 17 Location/Qualifiers /label= unknown 'label= unknown

0.

```
RESULT 2
AAB69062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Juery Match
Jaest Local S
Matches 18
                                                                                   WPI;
  The present invention
                                                  Antigenic Pseudomonas aeruginosa proteins, useful and/or diagnosis of P. aeruginosa infections and i
                                                                                                       Smith CJ,
                                                                                                                     (PROV-) PROVALIS UK
                                                                                                                                               01-JUL-1999;
                                                                                                                                                                  03-JUL-2000; 2000WO-GB02554
                                                                                                                                                                                      11-JAN-2001
                                                                                                                                                                                                          WO200102577-A1
                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                 diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                  18-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This peptide is the N-terminal fragment of a novel Pseudomonas aeruginosa protein antigen, Pa60. This fragment could be used for diagnostic detection of P. aeruginosa by forming complexes with specific antibodies, particularly in patients with cystic fibrosis (by analysis of mucus, e.g. in saliva), or in vaccines or immunogenic compositions to treat or prevent infection by P. aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein antigen from Pseudomonas aeruginosa and its antigenic fragments - useful diagnostically to detect specific antibodies, particularly in patients with cystic fibrosis, and as vaccines
                                                                                                                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                                                                                                                                                                               Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                        AAB69062 standard; peptide; 19 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-427879/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clancy RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                  2001-080988/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 2;
                                                                                                    Thompson
                                         aeruginosa
                                                                                                                                                                                                                                                                                                                               detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19 AA;
                      Page
                                                                                                                                                                                                                                                                                                            aeruginosa
                                                                                                                                                                                                                                                                                                                                          aeruginosa;
                                                                                                                                                                                                                                                                                                                                                             aeruginosa protein N-terminal peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cripps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                              99GB-0015419
                                                                                                                                                                                                                                        /note= "unspecified"
                                                                                                                                                                                                                             /note= "unspecified"
                      ٧.
                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23pp;
                                                                                                                                                                                                                                                                      'note= "unspecified"
                                                                                                                          LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW,
                    129pp;
                                                                                                      SE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93.8%;
100.0%;
 describes antigenic
                                                                                                                                                                                                                                                                                                                                infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                              chitinase; groEL; chiA; antigen;
nfection; immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dunkley M,
                                                                                                      Smith
                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 76;
Pred. No.
                                                                                                      WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                      Peek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kyd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 19;
3.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ç
                                                                                                     ,
,
 Pseudomonas
                                                                                                     Sizer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 19;
                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                    PJH,
                                                 the detection producing vaccines
aeruginosa
                                                                                                     Wilkinson
                                                                                                                                                                                                                                                                                                                                          vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                     MC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT 3
AAG30091
   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
 25-FEB-1999
05-MAR-1999
09-MAR-1999
23-MAR-1999
25-MAR-1999
29-MAR-1999
01-APR-1999
16-APR-1999
16-APR-1999
21-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
24-MAY-1999
05-MAY-1999
06-MAY-1999
07-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteins (P1). The P. aeruginosa proteins have antibacterial activity and can be used in vaccines and as antagonists. The proteins or their fragments, or antibodies are useful in the detection and/or diagnosis of P. aeruginosa. They are also useful for producing a vaccine and inducing an immune response against P. aeruginosa infection. An agent capable of antagonising, inhibiting or otherwise interfering with the function or expression of P1 are useful in the manufacture of a medicament for the treatment or prophylaxis of P. aeruginosa infections. The present sequence represents a probable P. aeruginosa protein
                                                                                                                                                                                                                                                                                                                                                 25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                             EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana protein fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAG30091;
                                                                                                                                                                                                                                                                                                                                                                        06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                         termination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAG30091 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EEKTPLTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                 2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
99US-0128714

99US-0130077

99US-0130610

99US-0130891

99US-0131449

99US-0132408

99US-0132484

99US-0132485

99US-0132485

99US-0132487

99US-0132487

99US-0132487

99US-0134287

99US-0134278

99US-0134278

99US-0134278

99US-0134278

99US-0134278

99US-0134278

99US-0134278

99US-0134278

99US-0134278
                                                                                                                                                                                                                                           99US-0126264.
99US-0126785.
99US-0127462.
99US-0128234.
                                                                                                                                                                                                                                                                                                    99US-0123548
                                                                                                                                                                                                                                                                                                                            99US-0121825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     291 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 22; 3.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

			~~~~~	******	****	~~~~~~~	· * * * * * * * * * * * * * * * * * * *	\$\frac{1}{2}\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$
22777822222	2222222	19 19 19 19 19 19	12 12 13 14	2000022	22222222			-000000000000
		16-JUL- 19-JUL- 19-JUL- 19-JUL- 19-JUL- 19-JUL- 19-JUL- 20-JUL-	9-JUL- 3-JUL- 3-JUL- 5-JUL- 6-JUL-	100000	18-JUN- 18-JUN- 21-JUN- 22-JUN- 23-JUN- 23-JUN- 24-JUN- 28-JUN-	NOC-8	6-JUN 7-JUN 8-JUN 8-JUN 8-JUN	20-MAY 21-MAY 24-MAY 25-MAY 7-MAY 10-JUN 13-JUN 13-JUN 13-JUN 13-JUN 13-JUN 13-JUN
1199911199	19961-1-1	1001	JOE-19 JOE-19 JOE-19 JOE-19	CLCCN	JUN-11 JUN-12 JUN-11 JUN-11 JUN-11	3-JUN-1 3-JUN-1 3-JUN-1 1-JUN-1	70N-1 70N-1 70N-1 70N-1 70N-1	MAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JANAY-JA
999999999	00000000	999999999999999999999999999999999999999	999999999999999999999999999999999999999	999999999999999999999999999999999999999	666 666 666 666 666 666	666 666 666 666 666		X-1999 X-1999 X-1999 X-1999 X-1999 X-1999 X-1999 X-1999 X-1999
Sn66	SD666	3066 3066 3066 3066 3066	3066 3066 3066 3066 3066	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.	066 066 066 066 066	066 066 066 066	7000 7000 7000 7000 7000 7000 7000 700	99US-0135124. 99US-0135629. 99US-0136021. 99US-0136021. 99US-0136782. 99US-0137722. 99US-0137722. 99US-0137724. 99US-0137724.
000000000000000000000000000000000000000	200000000000000000000000000000000000000			8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-8-00-	0 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0-22.00	- ST
45522	4500		44355	1412	139 139 139 139 140 140 140 140 140 16	139,139,139,139,139,139,139,139,139,139,	139911398	)135 )135 )136 )136 )136 )137 )137 )137
118.	114. 186. 187.	355433456	85. 605.	542.	750. 763. 763. 763. 763. 763. 763. 763.	459 459 460 460	1119 1119 1152 452 453 454 454	10000000000000000000000000000000000000
							•	
•								
ים אקק אקקקקקקקקקקקקקקקקקקקקקקקקקקקקקקקק	קק קק קק קק קק קק	סי א מי סי סי סי סי סי סי א א א א א א א א א א א א א א א א א א א			קק קק קק קק קק קק קק קק קק קק קק	אק אק אק אק אק אק אק	מק מק מק מק מק מק מק מק מק מק מק מק מק מ	ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק
PR 255				ט ט ט ט ט ט ט ע ע ע ע ע ע ע ע ע ע ע ע ע				~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
				ט ט ט ט ט ט ט ע ע ע ע ע ע ע ע ע ע ע ע ע				~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
21-0CT- 21-0CT- 22-0CT- 22-0CT- 22-0CT- 22-0CT- 25-0CT- 25-0CT- 25-0CT- 26-0CT- 26-0CT-	14-0CT 14-0CT 18-0CT 21-0CT 21-0CT	07-0CT 08-0CT 12-0CT 13-0CT 13-0CT 14-0CT 14-0CT	24 - SEP 28 - SEP 29 - SEP 04 - OCT 05 - OCT	PR 13-SEP PR 13-SEP PR 15-SEP PR 20-SEP PR 22-SEP PR 23-SEP	26-AUG 27-AUG 27-AUG 27-AUG 30-AUG 31-AUG 01-SEP 07-SEP	18 - AUG 20 - AUG 20 - AUG 20 - AUG 20 - AUG 23 - AUG 23 - AUG 25 - AUG	10-AUC 10-AUC 11-AUC 12-AUC 13-AUC 13-AUC	R 02-AU R 02-AU R 02-AU R 02-AU R 04-AU R 04-AU R 04-AU R 04-AU R 04-AU R 05-AU R 05-AU R 05-AU R 05-AU R 06-AU R 06-AU R 09-AU R 09-AU
21-0CT- 21-0CT- 22-0CT- 22-0CT- 22-0CT- 22-0CT- 25-0CT- 25-0CT- 25-0CT- 26-0CT- 26-0CT-	14-0CT 14-0CT 18-0CT 21-0CT 21-0CT	07-0CT 08-0CT 12-0CT 13-0CT 13-0CT 14-0CT 14-0CT	24 - SEP 28 - SEP 29 - SEP 04 - OCT 05 - OCT	PR 13-SEP PR 13-SEP PR 15-SEP PR 20-SEP PR 22-SEP PR 23-SEP	26-AUG 27-AUG 27-AUG 27-AUG 30-AUG 31-AUG 01-SEP 07-SEP	18 - AUG 20 - AUG 20 - AUG 20 - AUG 20 - AUG 23 - AUG 23 - AUG 25 - AUG	10-AUC 10-AUC 11-AUC 12-AUC 13-AUC 13-AUC	R 02-AU R 02-AU R 02-AU R 02-AU R 04-AU R 04-AU R 04-AU R 04-AU R 04-AU R 05-AU R 05-AU R 05-AU R 05-AU R 06-AU R 06-AU R 09-AU R 09-AU
21-OCT-1999; 21-OCT-1999; 22-OCT-1999; 22-OCT-1999; 22-OCT-1999; 22-OCT-1999; 25-OCT-1999; 25-OCT-1999; 26-OCT-1999; 26-OCT-1999;	14 - OCT - 1999; 14 - OCT - 1999; 18 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999;	07-0CT-1999; 08-0CT-1999; 12-0CT-1999; 13-0CT-1999; 13-0CT-1999; 14-0CT-1999; 14-0CT-1999; 14-0CT-1999;	24 - SEP - 1999; 28 - SEP - 1999; 29 - SEP - 1999; 04 - OCT - 1999; 05 - OCT - 1999; 06 - OCT - 1999;	PR 10-SEP-1999; PR 11-SEP-1999; PR 15-SEP-1999; PR 16-SEP-1999; PR 20-SEP-1999; PR 20-SEP-1999; PR 23-SEP-1999; PR 23-SEP-1999;	26-AUG-1999; 27-AUG-1999; 27-AUG-1999; 27-AUG-1999; 31-AUG-1999; 31-AUG-1999; 01-SEP-1999; 07-SEP-1999;	18-AUG-1999; 20-AUG-1999; 20-AUG-1999; 20-AUG-1999; 20-AUG-1999; 23-AUG-1999; 25-AUG-1999;	09-AUG-1999 10-AUG-1999 11-AUG-1999 12-AUG-1999 13-AUG-1999 13-AUG-1999 13-AUG-1999 16-AUG-1999	R 02-AUG-1999; R 02-AUG-1999; R 02-AUG-1999; R 04-AUG-1999; R 04-AUG-1999; R 04-AUG-1999; R 05-AUG-1999; R 05-AUG-1999; R 05-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999;
21-OCT-1999; 21-OCT-1999; 22-OCT-1999; 22-OCT-1999; 22-OCT-1999; 22-OCT-1999; 25-OCT-1999; 25-OCT-1999; 26-OCT-1999; 26-OCT-1999;	14 - OCT - 1999; 14 - OCT - 1999; 18 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999; 21 - OCT - 1999;	07-0CT-1999; 08-0CT-1999; 12-0CT-1999; 13-0CT-1999; 13-0CT-1999; 14-0CT-1999; 14-0CT-1999; 14-0CT-1999;	24 - SEP - 1999; 28 - SEP - 1999; 29 - SEP - 1999; 04 - OCT - 1999; 05 - OCT - 1999; 06 - OCT - 1999;	PR 10-SEP-1999; PR 11-SEP-1999; PR 15-SEP-1999; PR 16-SEP-1999; PR 20-SEP-1999; PR 20-SEP-1999; PR 23-SEP-1999; PR 23-SEP-1999;	26-AUG-1999; 27-AUG-1999; 27-AUG-1999; 27-AUG-1999; 31-AUG-1999; 31-AUG-1999; 01-SEP-1999; 07-SEP-1999;	18-AUG-1999; 20-AUG-1999; 20-AUG-1999; 20-AUG-1999; 20-AUG-1999; 23-AUG-1999; 25-AUG-1999;	09-AUG-1999 10-AUG-1999 11-AUG-1999 12-AUG-1999 13-AUG-1999 13-AUG-1999 13-AUG-1999 16-AUG-1999	R 02-AUG-1999; R 02-AUG-1999; R 02-AUG-1999; R 04-AUG-1999; R 04-AUG-1999; R 04-AUG-1999; R 05-AUG-1999; R 05-AUG-1999; R 05-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999; R 06-AUG-1999;
21-CCT-1999; 99U 21-CCT-1999; 99U 22-CCT-1999; 99U 22-CCT-1999; 99U 22-CCT-1999; 99U 22-CCT-1999; 99U 25-CCT-1999; 99U 25-CCT-1999; 99U 26-CCT-1999; 99U 26-CCT-1999; 99U	14-OCT-1999; 99U 14-OCT-1999; 99U 18-OCT-1999; 99U 21-OCT-1999; 99U 21-OCT-1999; 99U 21-OCT-1999; 99U 21-OCT-1999; 99U	07-0CT-1999 990 08-0CT-1999 990 12-0CT-1999 990 13-0CT-1999 990 13-0CT-1999 990 13-0CT-1999 990 13-0CT-1999 990 14-0CT-1999 990 14-0CT-1999 990	24-SEP-1999; 990 24-SEP-1999; 990 28-SEP-1999; 990 04-OCT-1999; 990 05-OCT-1999; 990	PR 10-SEP-1999, 991 PR 13-SEP-1999, 991 PR 15-SEP-1999, 991 PR 16-SEP-1999, 991 PR 20-SEP-1999, 991 PR 23-SEP-1999, 991	26-AUG-1999; 991 27-AUG-1999; 991 27-AUG-1999; 991 27-AUG-1999; 991 30-AUG-1999; 991 31-AUG-1999; 991 01-SEP-1999; 991 07-SEP-1999; 991	18 - AUG - 1999 999 999 20 - AUG - 1999 999 20 - AUG - 1999 999 23 - AUG - 1999 999 25 - AUG - 1999 999 999 999 999 999 999 999 999	09-AUG-1999; 99 11-AUG-1999; 99 11-AUG-1999; 99 12-AUG-1999; 99 13-AUG-1999; 99 13-AUG-1999; 99 16-AUG-1999; 99	R 02-AUG-1999; 99 R 02-AUG-1999; 99 R 02-AUG-1999; 99 R 04-AUG-1999; 99 R 05-AUG-1999; 99 R 06-AUG-1999; 99
21-OCT-1999; 99US-011 21-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 25-OCT-1999; 99US-011 25-OCT-1999; 99US-011 26-OCT-1999; 99US-011 26-OCT-1999; 99US-011	14-OCT-1999; 99US-01 14-OCT-1999; 99US-01 18-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01	07-0CT-1999; 99US-01 08-0CT-1999; 99US-01 12-0CT-1999; 99US-01 13-0CT-1999; 99US-01 13-0CT-1999; 99US-01 13-0CT-1999; 99US-01 14-0CT-1999; 99US-01 14-0CT-1999; 99US-01	24 SEP-1999; 99US-01 28 SEP-1999; 99US-01 28 SEP-1999; 99US-01 04 OCT-1999; 99US-01 05 OCT-1999; 99US-01 06 OCT-1999; 99US-01	PR 10-SEP-1999; 99US-01 PR 13-SEP-1999; 99US-01 PR 15-SEP-1999; 99US-01 PR 16-SEP-1999; 99US-01 PR 20-SEP-1999; 99US-01 PR 22-SEP-1999; 99US-01 PR 23-SEP-1909; 99US-01	26-AUG-1999; 99US-0 27-AUG-1999; 99US-0 27-AUG-1999; 99US-0 27-AUG-1999; 99US-0 30-AUG-1999; 99US-0 31-AUG-1999; 99US-0 01-SEP-1999; 99US-0 07-SEP-1999; 99US-0	18-AUG-1999; 99US-0 20-AUG-1999; 99US-0 20-AUG-1999; 99US-0 20-AUG-1999; 99US-0 23-AUG-1999; 99US-0 23-AUG-1999; 99US-0 25-AUG-1999; 99US-0	09-AUG-1999; 99US-0 10-AUG-1999; 99US-0 11-AUG-1999; 99US-0 12-AUG-1999; 99US-0 13-AUG-1999; 99US-0 13-AUG-1999; 99US-0 16-AUG-1999; 99US-0 17-AUG-1999; 99US-0	R 02-AUG-1999; 99US-0 R 02-AUG-1999; 99US-0 R 02-AUG-1999; 99US-0 R 02-AUG-1999; 99US-0 R 04-AUG-1999; 99US-0 R 04-AUG-1999; 99US-0 R 05-AUG-1999; 99US-0 R 05-AUG-1999; 99US-0 R 06-AUG-1999; 99US-0 R 06-AUG-1999; 99US-0 R 06-AUG-1999; 99US-0 R 06-AUG-1999; 99US-0
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01533 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01547 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0148 10-AUG-1999; 99US-0148 11-AUG-1999; 99US-0148 12-AUG-1999; 99US-0148 13-AUG-1999; 99US-0148 13-AUG-1999; 99US-0148 13-AUG-1999; 99US-0149	R 02-AUG-1999; 99US-0146 R 02-AUG-1999; 99US-0146 R 02-AUG-1999; 99US-0146 R 02-AUG-1999; 99US-0147 R 04-AUG-1999; 99US-0147 R 04-AUG-1999; 99US-0147 R 04-AUG-1999; 99US-0147 R 05-AUG-1999; 99US-0147 R 06-AUG-1999; 99US-0147 R 06-AUG-1999; 99US-0147 R 06-AUG-1999; 99US-0147 R 06-AUG-1999; 99US-0147
21-OCT-1999; 99US-011 21-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 22-OCT-1999; 99US-011 25-OCT-1999; 99US-011 25-OCT-1999; 99US-011 26-OCT-1999; 99US-011 26-OCT-1999; 99US-011	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01533 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01547 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0148 10-AUG-1999; 99US-0148 11-AUG-1999; 99US-0148 12-AUG-1999; 99US-0148 13-AUG-1999; 99US-0148 13-AUG-1999; 99US-0148 13-AUG-1999; 99US-0149	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01533 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01547 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0147935 10-AUG-1999; 99US-0148171 11-AUG-1999; 99US-0148341 12-AUG-1999; 99US-0148341 13-AUG-1999; 99US-0148565 13-AUG-1999; 99US-0148684 16-AUG-1999; 99US-01493684 16-AUG-1999; 99US-01493684	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01533 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01547 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0147935 10-AUG-1999; 99US-0148171 11-AUG-1999; 99US-0148341 12-AUG-1999; 99US-0148341 13-AUG-1999; 99US-0148565 13-AUG-1999; 99US-0148684 16-AUG-1999; 99US-01493684 16-AUG-1999; 99US-01493684	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01533 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01547 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0147935 10-AUG-1999; 99US-0148171 11-AUG-1999; 99US-0148341 12-AUG-1999; 99US-0148341 13-AUG-1999; 99US-0148565 13-AUG-1999; 99US-0148684 16-AUG-1999; 99US-01493684 16-AUG-1999; 99US-01493684	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01530 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01540 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0147935 10-AUG-1999; 99US-0148171 11-AUG-1999; 99US-0148341 12-AUG-1999; 99US-0148341 13-AUG-1999; 99US-0148565 13-AUG-1999; 99US-0148684 16-AUG-1999; 99US-01493684 16-AUG-1999; 99US-01493684	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303
21-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01608; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-01609; 22-OCT-1999; 99US-016144; 25-OCT-1999; 99US-016144; 25-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01614; 26-OCT-1999; 99US-01613;	14-OCT-1999; 99US-01596 14-OCT-1999; 99US-01596 18-OCT-1999; 99US-01595 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607- 21-OCT-1999; 99US-01607-	07-0CT-1999; 99US-01580 08-0CT-1999; 99US-01582 12-0CT-1999; 99US-01582 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 13-0CT-1999; 99US-01592 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593 14-0CT-1999; 99US-01593	24-SEP-1999; 99US-01556 28-SEP-1999; 99US-01566 29-SEP-1999; 99US-01565 04-OCT-1999; 99US-01577 05-OCT-1999; 99US-01577 06-OCT-1999; 99US-01577	PR 10-SEP-1999; 99US-01530 PR 13-SEP-1999; 99US-01530 PR 15-SEP-1999; 99US-01540 PR 16-SEP-1999; 99US-01540 PR 20-SEP-1999; 99US-01547 PR 22-SEP-1999; 99US-01551 PR 23-SEP-1999; 99US-01551	26-AUG-1999; 99US-01500 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 27-AUG-1999; 99US-01510 30-AUG-1999; 99US-01510 31-AUG-1999; 99US-01510 01-SEP-1999; 99US-01510 07-SEP-1999; 99US-01510	18-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 20-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 23-AUG-1999; 99US-0149; 25-AUG-1999; 99US-0149;	09-AUG-1999; 99US-0147935 10-AUG-1999; 99US-0148171 11-AUG-1999; 99US-0148341 12-AUG-1999; 99US-0148341 13-AUG-1999; 99US-0148565 13-AUG-1999; 99US-0148684 16-AUG-1999; 99US-01493684 16-AUG-1999; 99US-01493684	R 02-AUG-1999; 99US-0146386 R 02-AUG-1999; 99US-0146388 R 02-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147038 R 04-AUG-1999; 99US-0147302 R 04-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147302 R 05-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 06-AUG-1999; 99US-0147303 R 09-AUG-1999; 99US-0147303

```
RESULT 4
AAG30090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PR
PR
PR
PR
Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-OCT-1999;
28-OCT-1999;
28-OCT-1999;
28-OCT-1999;
29-OCT-1999;
                                                                                                                          25-FEB-1999
05-MAR-1999
09-MAR-1999
23-MAR-1999
23-MAR-1999
24-MAR-1999
01-APR-1999
01-APR-1999
01-APR-1999
16-APR-1999
21-APR-1999
21-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
24-APR-1999
26-MAY-1999
06-MAY-1999
06-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
11-MAY-1999
 14 - MAY - 1999

14 - MAY - 1999

18 - MAY - 1999

19 - MAY - 1999

20 - MAY - 1999

21 - MAY - 1999

24 - MAY - 1999

25 - MAY - 1999

27 - MAY - 1999

28 - MAY - 1999

01 - JUN - 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein identification; hybridisation assay; gentermination sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAG30090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG30090 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                               25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEKTPLTTAAXAPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEKAEMTTAMOSPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                               2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0161361.
99US-0161920.
99US-0161992.
99US-0161993.
99US-0162142.
  990S-0121825.
990S-0123548.
990S-0125788.
990S-0125788.
990S-0126785.
990S-0126785.
990S-012874.
990S-013044.
990S-013044.
990S-013044.
990S-013044.
990S-013044.
990S-013044.
990S-013044.
990S-013044.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-01324.
990S-0134.
990S-0135.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on; signal transduction pathway; metabolic pathway; genetic mapping; gene expression control; promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 44; DB Pred. No. 17; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35911.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
          18-JUN-1999
23-JUN-1999
21-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-JUN-1999

04-JUN-1999

07-JUN-1999

08-JUN-1999

10-JUN-1999

14-JUN-1999

16-JUN-1999

16-JUN-1999

17-JUN-1999
                                                                                                                                              19-JUL-1999
19-JUL-1999
19-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
21-JUL-1999
21-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
23-JUL-1999
23-JUL-1999
23-JUL-1999
23-JUL-1999
         26-JUL-1999
27-JUL-1999
27-JUL-1999
27-JUL-1999
27-JUL-1999
02-AUG-1999
02-AUG-1999
02-AUG-1999
03-AUG-1999
04-AUG-1999
04-AUG-1999
05-AUG-1999
                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                                                                                                                                     16-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                19-JUL-1999
                                                                                                                                                                                                                                                                                                                                                          19-JUL-1999
                                                                                                                                                                                                                                                                                                                                     -JUL-1999
          990S-0137528
990S-0137528
990S-0138640
990S-0138640
990S-0139452
990S-0139453
990S-0139453
990S-0139456
990S-0139461
990S-0139462
990S-0139461
990S-0139462
990S-0139463
990S-0139463
990S-0139463
990S-0139463
990S-0140S33
990S-0144863
990S-0144814
990S-01445214
990S-0145086
990S-0145086
990S-0145086
990S-0145086
990S-0145086
990S-0145086
990S-0145086
990S-0145086
990S-0145214
990S-0145214
990S-0145218
```

```
Query Match
                                                                                                                                                                                                                                                                      28-SEP-1999;
29-SEP-1999;
                                                                                                                                                                                                                                                                04-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-AUG-1999;
09-AUG-1999;
09-AUG-1999;
                                                                                                                                                                                                                                                                                                                16-SEP-1999
                                                                                                                                                                                                                                                                                                                                 13-SEP-1999
                                                                                                                                                                                                                                                                                                                                        10-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-AUG-1999;
06-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-AUG-1999
                   99US-0160989
99US-0161404
99US-0161406
99US-0161406
99US-0161350
99US-0161361
99US-0161361
99US-0161392
99US-0161392
                                                                                                                                                                     990S-0157753
990S-0157865
990S-0158029
990S-0158232
990S-0158232
990S-0159294
990S-0159295
990S-0159329
990S-0159330
990S-0159331
                                                                                                                                                                                                                                                                                                         99US-0152363.
99US-0153070.
99US-0153758.
99US-0154018.
99US-0154039.
99US-0154779.
                                                                                                                                                                                                                                                               99US-0156458.
99US-0156596.
99US-0157117.
                                                                                                                                                                                                                                                                                                                                                                  99US-0150884.
99US-0151065.
99US-0151066.
99US-0151080.
99US-0151303.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0148684.
99US-0149368.
99US-0149175.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0147935.
99US-0148171.
99US-0148319.
99US-0148341.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0147260.
99US-0147303.
99US-0147416.
99US-0147493.
99US-0147935.
                                                                                                                    9905-0160814
                                                                                                                           990S-0160768
990S-0160770
                                                                                                                                                                                                                                                                                           99US-0155139
99US-0155486
                                                                                             990S-0160980
                                                                                                             99us-0160815
                                                                                                                                          99US-0160767
                                                                                                                                                 99US-0159584
99US-0160741
                                                                                                                                                               99US-0159638
                                                                                                                                                                                                                                                                                     99us-0155659
                                                                                                                                                                                                                                                                                                                                                     9908-015193
                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0149426
99US-0149722
                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0149929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0148565.
                                                                                                                                                                                                                                                                                                                                                                                                                                      01497
54.38;
```

Score 44;

В 21;

Length

RESULT 6 AAB67588

```
В
                         Ş
                                                     Query Match
Best Local s
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB52865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 60.0 Matches 9; Conservative
                                                                                                                        The invention relates to a library of DNA fragments of Escherichia coll strains comprising polynucleotides (ABA88577-ABA88729 and ABA89533) and encoded proteins (ABB52459-ABB52919 and ABB52954-ABB53094) of nature B2/D+A. The polynucleotides have potential antiinflammatory, antibacterial and immunosuppressive activity as part of pharmaceutical compositions used to treat, palliate or prevent extra-intestinal E. coll infections. The polypeptides are useful for determining the phylogenic group of a given E. coll strain. These polypeptides can detect and treat an undesired development of E. coll, particularly an extra-intestinal septicaemia, pyelonephritis and meningitis this is particularly advantageous as bacterial resistance is increasing with the more frequent use of broad spectrum antibiotics.
                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                          A library of DNA fragments of Escherichia coli strains phylogenic determination of a given strain comprises ponature B2/D+ A- - \cdot
                                                                                                                                                                                                                                                                                                                     Example 6;
                                                                                                                                                                                                                                                                                                                                                                                                                           Bingen E, Bonacorsi S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (INRM ) INSERM INST NAT SANTE & RECH MEDICALE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-MAR-2000; 2000FR-0003145
02-FEB-2001; 2001FR-0001449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli; B2/D+A-; antiinflammatory; antibacterial; immunosuppressive; extra-intestinal infection; phylogeny; meningitis; systemic infection; non-diarrhoeal infection; septicaemia; pyelonephritis; antibiotic resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-MAR-2001; 2001WO-EP03445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli polypeptide SEQ ID NO 1139.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200166572-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABB52865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABB52865
  84
                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
EKVPCTSSGVAPIFVNA 100
                      EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                 2001-550253/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEKAEMTTAMQSPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEKTPLTTAAXAPVV
                                                     Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard; Protein;
                                                                                                                                                                                                                                                                                                                    Fig 6;
                                                                                                       306 AA;
                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                 646pp; English.
                                                              54.3%;
47.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                       Clermont O, Nassif X,
                                               Score 44; DB
Pred. No. 18;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 18;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                         22;
                                                  σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
                                                                         Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                      Tinsley
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                       ns for the polynucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                       of
f
                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT 7

AAG30089

ID AAG3

XX

AC AAG3

XX

DT 17-C

XX

AC Arab

XX

MW Prot

KW hybr
                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                    Query Match 54.3
Best Local Similarity 47.1
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Deoxyribonucleoside; deoxyribose 1-phosphate; thymidine phosphorylase; purine nucleoside phosphorylase; phosphopentose mutase; phosphopentose aldolase; fructose 1,6-diphosphate aldolase; deoxyribokinase; nucleoside 2-deoxyribosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence represents a deoxyribokinase enzyme. This enzyme is involved in the biosynthesis of deoxyribonucleosides, and is used in the method of the invention. The specification describes a method for the in vitro enzymatic synthesis of deoxyribonucleosides. The method comprises reacting deoxyribose 1-phosphate and a nucleobase to form a deoxyribonucleoside and an inorganic phosphate. Enzymes which may be used in the method of the invention include thymidine phosphorylase, purine nucleoside phosphorylase, phosphopentose aldolase, fructose 1,6-diphosphate aldolase, phosphopentose aldolase, fructose 1,6-diphosphate aldolase, deoxyribokinase, and nucleoside 2-deoxyribosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         In vitro enzymatic synthesis of deoxyribonucleosides comprises reacting deoxyribose 1-phosphate and a nucleobase to form a deoxyribonucleoside and an inorganic phosphate -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HOFF )
(INSP )
(PHAR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-AUG-2000; 2000WO'-EP08088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200114566-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Salmonella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Amino acid sequence of a deoxyribokinase enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB67588 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tischer W,
Marliere P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure;
protein identification; signal transduction hybridisation assay; genetic mapping; gene \boldsymbol{\varepsilon}
                                                  Arabidopsis thaliana protein fragment SEQ ID NO: 35910.
                                                                                         17-OCT-2000
                                                                                                                                                             AAG30089 standard; Protein;
                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       an inorganic phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-235026/24.
                                                                                                                                                                                                                                                   EKVPCTSSGVAPIFVNA
                                                                                                                                                                                                                                                                                    EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ROCHE DIAGNOSTICS GMBH.
INST PASTEUR.
PHARMA-WALDHOF GMBH & CO KG.
                                                                                                                                                                                                                                                                                                                                                                                            306 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 59-61; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ihlenfeldt
Pochet S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99EP-0116425.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                        54.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ή,
                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Barzu O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               306
                                                                                                                                                                 427
                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
A
                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                          44;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sakamoto H,
     gene expression
                                                                                                                                                                                                                                                                                                                                      DB
18;
                                                                                                                                                                                                                                                                                                                                                             22;
                        pathway; metabolic pathway;
                                                                                                                                                                                                                                                                                                                           6;
                                                                                                                                                                                                                                                                                                                                                             Length 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pistotnik
                                                                                                                                                                                                                                                                                                                             Indels
         control;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enzymes which
                                                                                                                                                                                                                                                                                                                           0;
         promoter;
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                             0;
            25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
26-APR-1999;
16-APR-1999;
16-APR-1999;
29-APR-1999;
21-APR-1999;
22-APR-1999;
23-APR-1999;
24-MAY-1999;
25-MAY-1999;
26-MAY-1999;
21-MAY-1999;
21-MA
                                                                                                                                                                                                                                                                           14-JUN-1999;
16-JUN-1999;
16-JUN-1999;
17-JUN-1999;
18-JUN-1999;
18-JUN-1999;
         18-JUN-1999
21-JUN-1999
22-JUN-1999
23-JUN-1999
23-JUN-1999
23-JUN-1999
23-JUN-1999
23-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      termination sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0128/02
99US-0127462.
99US-0128234.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000EP-0301439
           990S-013045

990S-013049

990S-013049

990S-0131449

990S-0132486

990S-0132486

990S-0132486

990S-0132486

990S-0132486

990S-0134218

990S-0134218

990S-013421

990S-013421

990S-013421

990S-013421

990S-013421

990S-013622

990S-0139421

990S-0139456

990S-0139456

990S-0139456

990S-0139462

990S-0139462

990S-0139462

990S-0139463

990S-0139463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0126264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0125788
```

14-JUL-1999 16-JUL-1999 16-JUL-1999 16-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999

28-JUN-1999 29-JUN-1999 30-JUN-1999 01-JUL-1999 01-JUL-1999 06-JUL-1999 06-JUL-1999 08-JUL-1999 12-JUL-1999 12-JUL-1999

99US-0140823. 99US-0140991. 99US-0141287. 99US-0141842.

```
RESULT 8
AAG43604
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                              ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         קקה
קקה ה
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local s
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-SEP-1999
13-SEP-1999
15-SEP-1999
20-SEP-1999
22-SEP-1999
23-SEP-1999
24-SEP-1999
24-SEP-1999
29-SEP-1999
05-OCT-1999
06-OCT-1999
06-OCT-1999
07-OCT-1999
07-OCT-1999
13-OCT-1999
13-OCT-1999
13-OCT-1999
13-OCT-1999
14-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-OCT-1999
21-OCT-1999
21-OCT-1999
21-OCT-1999
21-OCT-1999
22-OCT-1999
22-OCT-1999
25-OCT-1999
25-OCT-1999
25-OCT-1999
26-OCT-1999
26-OCT-1999
26-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
29-OCT-1999
                              EP1033405-A2
                                                               Arabidopsis thaliana.
                                                                                              Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                        Arabidopsis thaliana protein fragment SEQ ID NO: 54519.
                                                                                                                                                                                                                                                                    AAG43604 standard; Protein; 172 AA.
                                                                                                                                                                                               18-OCT-2000 (first entry)
                                                                                                                                                                                                                                        AAG43604;
                                                                                                                                                                                                                                                                                                                                                               208
                                                                                                                                                                                                                                                                                                                                                         2 EEKTPLTTAAXAPVV 16
||| :||| :|||
08 EEKAEMTTAMQSPVV 22:
                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 60.0
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0153070.
99US-0154018.
99US-0154018.
99US-0154018.
99US-0155438.
99US-0156458.
99US-0156458.
99US-0156458.
99US-0158232.
99US-0158233.
99US-0159294.
99US-0159294.
99US-0159294.
99US-0159294.
99US-0159331.
99US-0159331.
99US-0159331.
99US-0159331.
99US-0159331.
99US-0160761.
99US-0161406.
99US-0161361.
99US-0161361.
99US-0161361.
99US-0161393.
99US-0161393.
                                                                                                                                                                                                                                                                                                                                                                                                                                               54.3%;
60.0%;
                                                                                                                                                                                                                                                                                                                                                             222
                                                                                                                                                                                                                                                                                                                                                                                                                           Score 44; DB
Pred. No. 27;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 427;
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

10-AUG-1999 11-AUG-1999 12-AUG-1999 13-AUG-1999 13-AUG-1999 14-AUG-1999 17-AUG-1999 20-AUG-1999 20-AUG-1999 23-AUG-1999 23-AUG-1999 25-AUG-1999 25-AUG-1999 27-AUG-1999 27-AUG-1999

06-SEP-2000

28-JUL-1999 02-AUG-1999 02-AUG-1999 02-AUG-1999 03-AUG-1999 04-AUG-1999 05-AUG-1999 05-AUG-1999 06-AUG-1999 06-AUG-1999 09-AUG-1999

990S-0141842 990S-0142055 990S-0142055 990S-0142920 990S-0142920 990S-0143542 990S-0144085 990S-0144085 990S-0144332 990S-0144333 990S-0144333 990S-0144333 990S-0144333 990S-0144332 990S-0145086 990S-0145087 990S-0145087 990S-0145087 990S-0145087 990S-0145087 990S-0145913 990S-0145913 990S-0145913 990S-0145913 990S-0145913 990S-0145913 990S-014703 990S-014972 990S-0151065 990S-0151303 990S-0151303 990S-0151303

20-JUL-1999 21-JUL-1999 21-JUL-1999 21-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 23-JUL-1999 23-JUL-1999 23-JUL-1999

25-FEB-2000;

2000EP+0301439

25-FEB-1999 05-MAR-1999 09-MAR-1999 23-MAR-1999 25-MAR-1999 20-APR-1999 01-APR-1999 11-APR-1999 11-APR-1999 21-APR-1999 21-APR-1999 21-APR-1999 23-APR-1999 23-APR-1999 23-APR-1999 24-APR-1999 25-MAY-1999 06-MAY-1999 07-MAY-1999 14-MAY-1999 15-MAY-1999 21-MAY-1999 21-MAY-1999 21-MAY-1999 21-MAY-1999 25-MAY-1999 25-MAY-1999

	·	
		קים אקים אקים אקים אקים אקים אקים אקים א
25-AUG-1999 26-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 31-AUG-1999 31-AUG-1999 01-SEP-1999 07-SEP-1999 13-SEP-1999 15-SEP-1999 20-SEP-1999 22-SEP-1999 23-SEP-1999	199991 199991 199991 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 1999 19999 19999 19999 19999 19999 19999 19999 19999 19999 19999 1999	08-JU-1999 09-JU-1999 12-JU-1999 13-JU-1999 14-JU-1999 15-JU-1999 16-JU-1999 16-JU-1999 19-JU-1999 19-JU-1999 19-JU-1999 19-JU-1999 20-JU-1999 20-JU-1999 21-JU-1999
200000000000000000000000000000000000000	000000000000000000000000000000000000000	99US-0142920 99US-0142920 99US-0142977 99US-0143624 99US-0144085 99US-0144331 99US-0144333 99US-0144333 99US-0144333 99US-0144333 99US-0144334 99US-0144335 99US-0144352 99US-0144352 99US-0144684 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086 99US-0145086
		•

9908-0121825.
9908-0123548
9908-0123548
9908-0123548
9908-0126785.
9908-0127462.
9908-013049.
9908-013049.
9908-0132484.
9908-0132485.
9908-0134218.
9908-0134218.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013421.
9908-013945.
9908-013945.
9908-013945.
9908-013945.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.
9908-013946.

28-MAY-1999
01-JUN-1999
03-JUN-1999
04-JUN-1999
07-JUN-1999
10-JUN-1999
11-JUN-1999

```
RESULT 9
NAG43603
ID AAG4
XX
AC AAG

A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-0CT-1999
05-0CT-1999
06-0CT-1999
07-0CT-1999
13-0CT-1999
13-0CT-1999
13-0CT-1999
14-0CT-1999
14-0CT-1999
14-0CT-1999
14-0CT-1999
14-0CT-1999
21-0CT-1999
      25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-SEP-1999
28-SEP-1999
29-SEP-1999
04-OCT-1999
05-OCT-1999
06-OCT-1999
07-OCT-1999
08-OCT-1999
12-OCT-1999
                                                                                                                                                                                                            Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                    EP1033405-A2.
                                                                                                                                                                                                                                                                            Arabidopsis thaliana protein fragment SEQ ID NO:
                                                                                      25-FEB-2000;
                                                                                                                      06-SEP-2000
                                                                                                                                                                                    Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                  AAG43603;
                                                                                                                                                                                                                                                                                                                                                                                AAG43603 standard;
                                                                                                                                                                                                                                                                                                                  18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               y Match
Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                EEKTPVEKKTGVPVVKKA 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 51.9%;
Similarity 50.0%;
9; Conservative
                                                                                                                                                                                                                                                                                                                (first
                                                                                    2000EP-0301439
      99US-0121825.
99US-0123180.
99US-0123548.
99US-0125788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0155659
99US-0156596
99US-0156596
99US-0157117
99US-0158029
99US-0158029
99US-0159293
99US-0159293
99US-0159299
99US-0159299
99US-0159329
99US-0159331
99US-0159331
99US-0159637
99US-01670741
99US-01670768
99US-01670768
99US-0160980
99US-0160980
99US-0160980
99US-0161404
                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Score 42; DB; Pred. No. 21; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                215
                                                                                                                                                                                                                                                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 172;
                                                                                                                                                                                                                                                                                  54518.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
      18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
22-JUN-1999
22-JUN-1999
23-JUN-1999
23-JUN-1999
24-JUN-1999
24-JUN-1999
25-JUN-1999
26-JUN-1999
01-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                          25-MAR-1999
21-APR-1999
06-APR-1999
06-APR-1999
06-APR-1999
16-APR-1999
16-APR-1999
21-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
11-MAY-1999
11-JUN-1999
99US-0126264
99US-0126785
99US-0126785
99US-0128234
99US-0128234
99US-0130047
99US-01300491
99US-01300491
99US-01312497
99US-01312497
99US-0132486
99US-0134219
99US-0134254
99US-0139456
99US-0139457
99US-0139457
99US-0139459
99US-0143542
99US-0143542
99US-0143542
99US-0144085
```

5-JUL-1999; 9-JUL-1999; 9-JUL-1999; 9-JUL-1999;

-JUL-1999,

20-JUL-1999; 20-JUL-1999; 21-JUL-1999;

20-JUL-1999

21-JUL-1999 21-JUL-1999

22-JUL-1999 22-JUL-1999

6661

23-JUL-1999; 26-JUL-1999;

-JUL-1999;

27-JUL-1999;

```
RESULT 10
AAG43602
                                                                                                                                                                                                                                                                                                               Дβ
                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                  08-OCT-1999
13-OCT-1999
13-OCT-1999
13-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
21-OCT-1999
22-OCT-1999
22-OCT-1999
22-OCT-1999
23-OCT-1999
26-OCT-1999
26-OCT-1999
28-OCT-1999
28-OCT-1999
29-OCT-1999
25-FEB-1999

05-MAR-1999

09-MAR-1999

23-MAR-1999

25-MAR-1999

29-MAR-1999

01-APR-1999

06-APR-1999

06-APR-1999

16-APR-1999

16-APR-1999
                                                                                                                                            EP1033405-A2
                                                                                                                                                                             Protein identification hybridisation assay; termination sequence.
                                                                                                                                                                                                                Arabidopsis thaliana protein fragment SEQ ID
                                                                                                                                                                                                                                                                    AAG43602
                                                                                                         25-FEB-2000;
                                                                                                                          06-SEP-2000.
                                                                                                                                                             Arabidopsis thaliana
                                                                                                                                                                                                                                                    AAG43602;
                                                                                                                                                                                                                                  18-OCT-2000
                                                                                                                                                                                                                                                                                                               174
                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                         EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                EEKTPVEKKTGVPVVKKA 191
                                                                                                                                                                                      identification; signal transduction pathway; metabolic pathway;
sation assay; genetic mapping; gene expression control; promoter;
                                                                                                                                                                                                                                                                                                                                                Similarity 50.0
9; Conservative
                                                                                                                                                                                                                                                                     standard; Protein;
                                                                                                                                                                                                                                  (first entry)
                                                                                                         2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                  990S-0158232

990S-0159294

990S-0159293

990S-0159239

990S-0159330

990S-0159537

990S-0159537

990S-0160761

990S-0160776

990S-0160776

990S-016076

990S-016076

990S-0160814

990S-0160815

990S-0160815

990S-0161081

990S-0161446

990S-016146

990S-0161361

990S-0161361

990S-0161361

990S-0161361

990S-0161361

990S-0161361

990S-0161361

990S-0161361

990S-0161361
990S-0121825
990S-012548
990S-0125788
990S-0125788
990S-0126785
990S-0126785
990S-0127462
990S-0128734
990S-0128734
990S-0128714
990S-0128777
                                                                                                                                                                                                                                                                                                                                                       51.9%;
                                                                                                                                                                                                                                                                                                                                                Score 42; DB; Pred. No. 27; 1; Mismatches
                                                                                                                                                                                                                                                                      332 AA.
                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                   NO: 54517.
                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                   Length 215;
                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                  0
```

12-AUG-13-AUG-

1999;

9905-0144086.
9905-014433.
9905-014433.
9905-014433.
9905-014433.
9905-014433.
9905-014433.
9905-014463.
9905-014508.
9905-014508.
9905-014508.
9905-014508.
9905-014514.
9905-014514.
9905-014514.
9905-014514.
9905-014514.
9905-014518.
9905-014518.
9905-014518.
9905-014518.
9905-014518.
9905-014518.
9905-0146388.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-014720.
9905-0151330.
9905-0151330.
9905-0155326.
9905-015548.
9905-015548.
9905-015548.
9905-015548.
9905-015548.
9905-015548.
9905-015548.
9905-015548.

13-

-1999;

28-JUL-1999 02-AUG-1999 02-AUG-1999 02-AUG-1999 03-AUG-1999 04-AUG-1999 05-AUG-1999 05-AUG-1999 06-AUG-1999 06-AUG-1999 09-AUG-1999 09-AUG-1999 10-AUG-1999

 PR

 PR

23-SEP-1999; 24-SEP-1999; 28-SEP-1999; 29-SEP-1999; 04-OCT-1999; 05-OCT-1999; 06-OCT-1999; 07-OCT-1999;

31-AUG-1999; 01-SEP-1999; 07-SEP-1999; 10-SEP-1999; 13-SEP-1999; 15-SEP-1999; 16-SEP-1999; 20-SEP-1999; 22-SEP-1999;

16-AUG-1999 17-AUG-1999 18-AUG-1999 20-AUG-1999 20-AUG-1999 20-AUG-1999 23-AUG-1999 23-AUG-1999 25-AUG-1999 25-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999

קרטרטיטיט אל	אס מי אים אים אים אים אים אים אים אים אים אי
14 - MAY 19 19 - MAY 19 20 - MAY 19 21 - MAY 19 22 - MAY 19 23 - MAY 19 25 - MAY 19 26 - MAY 19 27 - MAY 19 27 - MAY 19 28 - MAY 19 27 - MAY 19 28 - MAY 19 29 - MAY 19 20 - MAY 19 21 - JUN 19 21 - JUN 19 22 - MAY 19 23 - JUN 19 24 - JUN 19 27 - JUN 19 28 - JUN 19 29 - JUN 19 20 - JUN 19 21 - J	21 23 23 23 23 23 23 23 23 23 23 23 23 23
11-1-12-12-12-12-12-12-12-12-12-12-12-12	APR- APR- APR- APR- APR- APR- APR- APR-
10000000000000000000000000000000000000	1999 1999 1999 1999 1999 1999 1999 199
100	9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9908- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008- 9008-
1134218 1134218 1134218 1134218 1134211 113421 113523 113523 113523 113522 113522 113522 113722 113722 113722 113722 113722 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113945 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 113946 1	0449 0510 0891 1449 2048 2048 2485 2485 2485
	-
	•
יים אין	ם פי פי פי פי פי פי פי פי פי
111111000000222222111110003	, , , , , , , , , , , , , , , , , , ,
23 - JUL-1 26 - JUL-1 27 - JUL-1 27 - JUL-1 27 - JUL-1 27 - JUL-1 27 - JUL-1 28 - JUL-1 28 - JUL-1 29 - JUL-1 29 - JUL-1 20 - AUG-1 01 - AUG-1 05 - AUG-1 06 - AUG-1 09 - AUG-1 09 - AUG-1 09 - AUG-1 11 - AUG-1 12 - AUG-1 13 - AUG-1 14 - AUG-1 15 - AUG-1 17 - AUG-1 18 - AUG-1 19 - AUG-1 19 - AUG-1 19 - AUG-1 10 - AUG-1 11 - AUG-1 12 - AUG-1 13 - AUG-1 19 - AUG-1 19 - AUG-1 19 - AUG-1 10 - SEP-1 10 - S	20-JI 20-JI 21-JI 21-JI 22-JI 22-JI
- 1999999999999999999999999999999999999	71-15 71-15 71-15 71-15 71-15 71-15 71-15
90 - 200 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
	0000000
1145218 1145218 1145218 1145913 1145913 1146388 1146388 1147303 1147303 1147303 1147303 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 1147316 114731	0144: 0144: 0144: 0144: 0145: 0145: 0145: 0145:
114 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	352. 632. 884. 914. 92.

```
RESULT 11
ABB66926
                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                          PR
В
                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-OCT-1999;
21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                        26-OCT-1999;
26-OCT-1999;
26-OCT-1999;
28-OCT-1999;
28-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-OCT-1999;
14-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-OCT-1999;
25-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-OCT-1999;
25-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-OCT-1999;
                                                                                                                                                                                                                                                    Drosophila melanogaster polypeptide SEQ ID NO
                                                                                                                                                                                                                                                                                                    ABB66926 standard;
                                                                                                                                      23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                              23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                               WO200171042-A2
                                                                                                                                                                                                              Drosophila melanogaster
                                                                                                                                                                                                                              pharmaceutical.
                                                                                                                                                                                                                                      Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                     26-MAR-2002
                                                                                                                                                                                                                                                                                      АВВ66926;
                                               genes from Drosophila interactions -
                                                                                N-PSDB;
                                                                                         WPI;
                                                                                                       Venter JC,
                                                                                                                                                                                27-SEP-2001
                               Disclosure; SEQ ID
                                                                New isolated nucleic
                                                                                                                      (PEKE ) PE
                                                                                                                                                                                                                                                                                                                                            291 EEKTPVEKKTGVPVVKKA 308
                                                                                                                                                                                                                                                                                                                                                            Ν
                                                                                                                                                                                                                                                                                                                                                           EEKTPLTTAAXAPVVXNA 19
                                                                                         2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                ABL11029.
                                                                                                                        CORP
                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                       Adams
                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                         990S-0160989
990S-0161404
990S-0161405
990S-0161406
990S-0161360
990S-0161360
990S-0161361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0159331.
99US-0159637.
99US-0159638.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US+0159584.
99US-0160741.
99US-0160767.
99US-0160768.
99US-0160770.
                                                                                                                                                                                                                                                                                                                                                                                                          99US-0161920.
99US-0161992.
99US-0161993.
99US-0162142.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0160981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0160814
                                                                                                                        ΥN
                                                                                                       <u>'</u>3
                                                                                                                                                                                                                                                                                                     Protein; 1012 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -0160980
                                  Ö
                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                   51.9%;
                                                        acid
a and
                                                                                                         Ε.
                                 27570; 21pp + Sequence Listing;
                                                                                                          , dwd
                                                         for elucion
                                                                                                                                                                                                                                                                                                                                                                                     Score 42; DB
Pred. No. 44;
                                                        ection reagent elucidating ce
                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                         Myers
                                                                                                          딸.;
                                                          nt for
                                                                                                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                                                             8;
                                                                                                                                                                                                                                                         27570
                                                          r detecting signalling
                                                                                                                                                                                                                                                                                                                                                                                            Length 332;
                                   English
                                                           1000
and c
                                                                                                                                                                                                                                                                                                                                                                               0;
                                                           cell-cell
                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                0
```

The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABB48482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The sequence data for this patent did not form specification, but was obtained in electronic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
The present invention relates to the genome sequence of Listeria monocytogenes EGD-e (see ABA03041). The genome sequence and fragments of it are useful for selecting probes and primers for detecting genes in L. monocytogenes and related organisms, and for studying genetic polymorphisms and other genomes. The present sequence is a protein encoded by the genome sequence of the present invention. Proteins expressed from the genome sequence are useful for raising specific antibodies, identification of L. monocytogenes and related organisms, an for biosynthesis and biodegradation, especially biosynthesis of Vitamin B12. The genome sequence and proteins encoded by it are also useful for selecting compounds that regulate gene expression and cell replication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Listeria monocytogenes protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB48482 standard;
                                                                                                                                                                                                                                                                                                                                                                                     Genomic sequence for Listeria monocytogenes, useful e.g. for and prevention of Listeria and related bacterial infections,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perez-Diaz J, Bayuu-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chakraborty T, Domann E, Perez-Diaz J, Baquero F, Maduenio E, De Pablos B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Buchrieser C, Frangeul L, Couve E, Rusniok C, Fsihi H, Dehoux Dussurget O, Chetouani F, Nedjari H, Glaser P, Kunst F, Cossari Danisls J, Goebel W, Kreft J, Kuhn M, Ng E, Vazquez-Boland JA; Dominguez-Bernal G, Garrido-Garcia P, Tierrez-Martinez A, Amend Dominguez-Bernal G, Garrido-Garcia P, Tierrez-Martinez A, Tierrez-Ma, Tierrez-Martinez A, Tierrez-Martinez A, Tierrez-Martinez A, Tie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (INSP ) INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-2001; 2001WO-FR01118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200177335-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Listeria monocytogenes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vitamin B12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          695 EEVTPYNTAPHSPIV 709
                                                                                                                                                                                                                                                                                                                Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rose
                                                                                                                                                                                                                                                                                                                                                                related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002-010914/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                  polypeptides
                                                                                                                                                                                                                                                                                                                SEQ ID No 1187; 192pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Voss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1012 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;\ \mbox{gene therapy; vaccine; biosynthesis; biodegradation; bacterial infection; disease.}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PASTEUR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000FR-0004629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hain T, Berche P, Charbit A, Garcia Del Portillo F, Gomez-I Wehland J, Kaerst U, Entian i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rusniok C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .3e+02;
les 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           n part of the printed format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Entian K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gomez-Lopez N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Έ,
ι Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Durant L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                        treatment and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cossart P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Α;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8888888<del>8</del>8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
AU36108
                                                                                                                                                                                                                                                                                                                                                     21-MAR-2000; 2000US-191078P.
23-MAY-2000; 2000US-206848P.
26-MAY-2000; 2000US-207727P.
23-OCT-2000; 2000US-242578P.
27-NOV-2000; 2000US-253625P.
26-DEC-2000; 2000US-257931P.
16-FEB-2001; 2001US-269308P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
The invention relates to antisense inhibitors of genes essential to prokaryotic ceilular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, staphylococcus aureus, Salmonella typhi, Klebsiella invention is also useful for the identification of potential new targets for antibiotic development. The antisense nucleic acids can also be used and to obtain antibodies capable of binding to the expressed proteins, The proteins can be used to screen compounds in rational drug discovery programmes. The antisense nucleic acid sequence is also useful to screen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                            New polynucleotides antibiotics, compris
                                                                                                                                                                                  Example 3; Seq ID No 11701;
                                                                                                                                                                                                                                                                                            Yamamoto
                                                                                                                                                                                                                                                                                                        Haselbeck
                                                                                                                                                                                                                                                                                                                                   (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2001; 2001WO-US09180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W0200170955-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Antisense; prokaryotic cellular antibiotic; antibacterial; drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Klebsiella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAU36108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAU36108 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and modulate L. monocytogenes related diseases. In addition, sequence and proteins encoded by it are useful in pharmaceutivaccines compositions for the treatment or prevention of infemonocytogenes and related organisms.

Note: The sequence data for this patent did not form part of specification, but was obtained in electronic format directly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Loca1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                2001-611495/70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EETELTNAVYAPVI 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                               ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                            R R R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 57.: 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pneumoniae cellular proliferation protein #96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258 AA;
                                                                                                                                                                                                             comprise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                          Ohlsen
Xu HH;
                                                                                                                                                                                                      for the identification and development
se sequences of antisense nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein; 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49.48;
                                                                                                                                                                                                                                                                                                      Zyskind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    drug
                                                                                                                                                                                 511pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 40; DB:
Pred. No. 73;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   proliferation protein;
design.
                                                                                                                                                                                                                                                                                                    'n,
                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                    Wall
                                                                                                                                                                                                                                                                                                   Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۸.
                                                                                                                                                                                                                                                                                                Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    n addition, the genome pharmaceutical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              part of the printed directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   infections by L.
                                                                                                                                                                                                          · of
                                                                                                                                                                                                                                                                                                Carr GJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR51691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
German patients.

German patients.

The virus consists of RNA in a peg-shaped core made of p24 su surrounded by an outer core of p17 and then a glycoprotein en which, apart from host-cell derived lipids, comprises gp41 an envelope protein gp120 (which can bind to the CD4 receptor). Related viruses have at least 75% homology over the entire genome with max. differences for the various regions LTR and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                      reverse transcriptase (RT), although this is 3 to 7 kD smaller Western blots than the enzyme from HIV-1 or -2. It is less reathan HIV-1, but more reactive than HIV-2, against p24-specific antibodies and its gp41 transmembrane protein reacts with antilin sera of African patients but not (or only weakly) with sera
                                                                                                                                             MVP-5180/91 has been isolated from peripheral lymphocytes of a patient, from the Cameroons, with immune deficiency. It grows in the same human cells as HIV-1; like HIV it produces an Mg-dependent reverse transcriptase (RT), although this is 3 to 7 kD smaller in Western blots than the enzyme from HIV-1 or -2. It is less reactive
                                                                                                                                                                                                                                                                                                                                                                                                                   06-OCT-1992;
22-OCT-1992;
30-DEC-1992;
01-JUN-1993;
                                                                                                                                                                                                                                                                          New HIV-type immune deficiency virus deriv. cDNA or antigens, useful for c
                                                                                                                                                                                                                                           Disclosure;
                                                                                                                                                                                                                                                                  infections and vaccines
                                                                                                                                                                                                                                                                                                                         N-PSDB; AAQ58974.
                                                                                                                                                                                                                                                                                                                                                                                         (BEHW )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EP591914-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIV-type virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HIV-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-OCT-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               retrovirus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for homologous nucleic acids which are required for cell proliferation a wide variety of organisms. The present sequence represents an essential prokaryotic cellular proliferation protein. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR51691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR51691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 EQKTPLTAADMAAI 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 EEKTPLTTAAXAPV
                                                                                                                                                                                                                                                                                                                                    1994-120077/15.
                                                                                                                                                                                                                                                                                                                                                                 ۷A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunodeficiency virus;
                                                                                                                                                                                                                                                                                                                                                                                         BEHRINGWERKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 57.3
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                              Eberle J,
                                                                                                                                                                                                                                     Fig 7; 73pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                  92DE-4235718.
92DE-4244541.
93DE-4318186.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MVP-5180/91 (ECACC V92092318).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MVP5180/91 gag protein (cloned).
                                                                                                                                                                                                                                                                                                                                                                                                                                                          92DE-4233646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93EP-0116058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein; 498 AA
                                                                                                                                                                                                                                                                                                                                                                                         AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cy virus; HIV; antigen; detection; diagnosis;
lymphocyte; reverse transcriptase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49.48;
57.18;
                                                                                                                                                                                                                                                                                                                                                              Gurtler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2,
                                                                                                                                                                                                                                                                                                                                                             દ્વ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     reverse transcriptase
                                                                                                                                                                                                                                                                                                                                                          Hauser H-P,
                                                                                                                                                                                                                                                                         diagnosing
                                                                                                                                                                                                                                                                                       ECACC V 92092318 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .3e+02;
                                                                                                                                                                                                                                                                          retroviral
                                                                                                                                                                                                                                                                                                                                                        Knapp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 445;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                        s
                                                                                                                                                                                                                                                                                       and
                                                                                                                       antibodies
                                                        and
                                                                                subunits
                                                                   envelope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                            of
                                                                                                                                                                                           in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
```

```
RESULT 15
AAW93076
ID AAW93
XX
AC AAW93
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Soxco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                   $355555555$
Search completed: March 14, 2003, 09:11:28
Job time : 38 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 44.4%;
Matches 8; Conservative
                                                                                       Qy
                                                                  B
                                                                                                                Query Match
Best Local Similarity 44.4%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-1993;
06-OCT-1992;
22-OCT-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10%, POL 12%, GAG 14%, VIF 15% and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW93076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW93076 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIV-type retrovirus; detection; antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19-MAY-1999
                                                                                                                                                                                         This invention describes the isolation of a novel HIV-type retrovirus called MVP-5180/91 (ECACC V 92092318). Antigens produced from this product can be used in an assay kit for detecting antibodies against viruses that cause immune deficiency, preferably where the assay is a Western blot, ELISA or fluorescence immunoassay. MVP-5180/91, cDNA and/or antigen can be used for detecting retroviruses that cause immune deficiency and to prepare vaccines. This sequence represents an HIV MVP 5180 gag protein.
                                                                                                                                                                                                                                                                                                                                 New HIV-type retrovirus and corresponding cDNA, recombinant I antigen - used for detecting retro-viruses that cause immune deficiency and to prepare vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-OCT-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-JAN-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP890642-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human immunodeficiency virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HIV isolate 5180 gag protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1999-072878/07.
                                                                                                                                                                                                                                                                                                              Example 11; Fig 7; 39pp; German.
                                                                                                                                                                                                                                                                                                                                                                                                                 Brunn AV,
                                                                                                                                                                                                                                                                                                                                                                                                                                       (DADE-) DADE BEHRING MARBURG GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-DEC-1992;
                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 EEKTPLTTAAXAPVVXNA 19
                                                                  119 EETSPRQTSQNYPIVTNA 136
                                                                                         2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    498 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                 Eberle J,
                                                                                                                                                                      498 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93DE-4318186.
92DE-4233646.
92DE-4235718.
92DE-4244541.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93EP:0116058.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein; 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \mbox{MVP-5180/91; ECACC V 92092318; antigen; assay kit; immune deficiency; vaccine.}
                                                                                                                                                                                                                                                                                                                                                                                                                  Guertler LG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 40; DB 15; I
Pred. No. 1.5e+02;
3; Mismatches 7;
                                                                                                                     Score 40; DB 20; 1
Pred. No. 1.5e+02;
3; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENV 228
                                                                                                                                                                                                                                                                                                                                                                                                                    Hauser H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                    Knapp S;
                                                                                                                                                                                                                                                                                                                                                                    recombinant DNA and
                                                                                                                                                Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                           0,
                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                             0;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
          Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-359-426C-2
81
1 XEEKTPLTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 14, 2003, 09:10:49; Search time 14 Seconds (without alignments) 39.931 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
        Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn2_6/ptodata/2/18a/5A_COMB.pep:*
/cgn2_6/ptodata/2/18a/5B_COMB.pep:*
/cgn2_6/ptodata/2/18a/6A_COMB.pep:*
/cgn2_6/ptodata/2/18a/6B_COMB.pep:*
/cgn2_6/ptodata/2/18a/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/18a/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
        DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapext 0.5
  US-08-943-173-16
US-08-943-173-2
US-09-117-257-19
US-09-489-352-19
US-09-489-352-48
US-09-117-257-48
US-09-134-001C-3558
US-09-134-001C-3558
US-08-119-2628-6
US-08-119-2628-6
US-08-119-2628-11
US-09-091-219-24
US-08-936-165A-461
US-09-091-035-204
US-09-071-035-204
US-09-071-035-204
                                                                                                                                                                                                                                                                                                                                                          US-08-194-338-12

US-08-470-202-59

US-08-471-770-59

US-08-168-059-59

US-09-109-916-59

US-08-624-125-20

US-08-624-125-20

US-08-613-173-8

US-08-943-173-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
    sequence
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                             4, Appli
4, Appli
16, Appli
16, Appli
2, Appli
19, Appli
19, Appli
19, Appli
19, Appli
48, Appli
48, Appli
52, Appli
6, Appli
6, Appli
11, Appli
                                        4, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                     App1
                                                           TOPOLOGY: linear

MOLECULE TYPE: protein

HYPOTHETICAL: NO

ANTI-SENSE: NO

FRAGMENT TYPE: internal

US-08-194-338-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESUI
US-08
; Sec
; Pat
; GI
Best Local Similarity
                      Query Match
                                                                                                                                                                                                                                TELEPHONE: (619) 235-855
TELEFAX: (619) 235-0176
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                        APPLIANTE: 08-FEB-1/1
EILING DATE: 08-FEB-1/2
CLASSIFICATION: 435
CLASSIFICATION DATA:
APPLICATION NUMBER: US 07/676,174
APPLICATION NUMBER: US 07/676,174
APPLICATION NUMBER: 105 07/676,174
APPLICATION:
                                                                                                                                                                                                                                                                                           NAME: ISraelsen, Ned A.
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: NIH101.001DV1
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 235-8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: LIM PC COMPACIBLE

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PatentIn Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/194,338
                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 28-MAR-1991
ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A.
                                                                                                                                                                           TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                               788 amino acids
                                                                                                                                                      linear
```

internal

50.6%; 52.9%;

Score Pred.

No 1: DB 50; ۲,

Length 788;

28 35	343.2	267	4.4	S-08	Sequence 137, App
o vi	. د	١o	. 4	09-056-55	
	۵. د د	рσ	4 4	09-072-59	
3	ω :	4	ω 4	۰ ۲	Patent No. 5210183
3	43.2	σ	4	3-600	
3	$\omega$	4	N	US-09-032-315-4	Δ.
υ ω	ω.	4	N	993-3	4
6 3	ω.	4	4	399-886-4	
7 3	ω.	4	4	396-2	
8 3	ω	4	4	576-2	4
9 3	ω.	S	4	09-134-0	
0 3	ω.	6	ш	7-841-651-4	
1 3	ω	8	σ	0183-3	თ
2 3	43.2	$\sim$	4	564-805-	N
ω u	<b>ω</b>	N	4	564-805-2	Sequence 2, Appli
4 3	ω.	N	4	-	224
υ ω	٠	N	4	-09-564-805-2	226,
				ALIGNMENTS	
08-194-338-1 08-194-338-1 equence 12,	12 Applicat	ion US/	083	94338	
atent No. 5474898 GENERAL INFORMATION:	5474898 IFORMATION:				
APPLICANT:	Venter,		ი.		
APPLICANT:	Fraser, C	, Claire M.	_ o	an R	
TITLE OF INVENTION:	NVENTION	ر ر	PAN	INE RECEPTOR	
NUMBER OF SEQUENCES: 1	SEQUENCES:	3F.SS.			
ADDRESSEE:	E: Knobl	Knobbe, Martens	ter	s, olson and Bear	
STREET	1 20		Center	Drive,	
STATE:	CA	ממכוו			
COUNTRY:	USA				
ZIP: 9	660				
COMPUTER F	В	FORM:	-		
COMPUTER: I	C: IBM PC	<pre>IBM PC compatible</pre>	npatik	île	

Д γ

```
Query Match
Best Local Similarity
Thes 8; Conserve
                                                                                                       ; MOLECULE TYPE:
; FRAGMENT TYPE:
US-08-470-202-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-470-202-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                  TELEFAX: 202-4(
INFORMATION FOR SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 08/132,653
FILING DATE: 05-0CT-1993
APPLICATION NUMBER: DE P 42 33 646.5
FILING DATE: 06-0CT-1992
PRIOR APPLICATION DATA:
APPLICATION UNMBER: DE P 42 35 718.7
FILING DATE: 22-0CT-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/470,202
                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 37,096
REFERENCE/DOCKET NUMBER: 05
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: DE P
FILING DATE: 01-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Michael J Blake
                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:

PRIOR APPLICATION UMBER: DE P 43 18 186.4
                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    602
                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                    LENGTH:
2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EDQPTTTAAAAPLASAA 618
                                                                                                                                            amino actinear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5759808
                                                                                                                                                                                                                                                                                                         Michael J. Blake
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08470202
                                                                                                                                                                                    498 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1300 I Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                 202-408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hauser, Hans-Peter
                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brunn, Albrecht v.
Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eberle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Guertler, Lutz G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Finnegan, Henderson, Farabow, Garrett &
                                                                                                                                                                                                                                                 202-408-4000
                                                                                                                         internal
                                                                                                                                         protein
                                                                                                                                                                                                                    ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . Use
63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Josei
                                                            44.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Retrovirus from the HIV Group and Its
                                                                            49.48;
                                                                                                                                                                                                                                                                                                                                                                                                     DE P 42 44 541.8
                                                                                                                                                                                                                                                                               05495-0001-00000
                                            Score 40; DB
Pred. No. 44;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                            DB
                                                                            ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7;
                                               7;
                                                                            Length 498
                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                              0;
                 Ъ
                                              QУ
                                                                                                                                      ; MOLECULE TYPE:
; FRAGMENT TYPE:
US-08-471-770-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-471-770-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 59,
                                                                              Matches
                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: UFILING DATE: 06-JUN-1
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Rel CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 06-OCT-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Guertler APPLICANT: Eberle,
                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 EETSPROTSONYPIVTNA 136
                 119 EETSPRQTSQNYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 01-JU
                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE: 22-OCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 0 FILING DATE: 05-OCT-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Washington
                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                          NAME: Carol P. Einaudi REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & ADDRESSEE: Dunner STREET: 1300 I Street, N.W.
                                              2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                  ENGTH:
                                                                            Similarity
8; Conserv
                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08471770
                                                                                                                                                                                                                  498 amino acids
                                                                                                                                                                                                                                                                  202-408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hauser, Hans-Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brunn, Albrecht v.
Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Guertler, Lutz
                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                               202-408-4000
                                                                                                                                                      protein internal
                                                                                                                                                                                                                                                                                                                                                                            01-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-OCT-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                       30-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-OCT-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-JUN-1995
                                                                                           49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Josei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Retrovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DE P 42 33 646.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 08/132,653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DE P 42 35 718.7
                                                                                                                                                                                                                                                                                                                                                                                        DE P
                                                                                                                                                                                                                                                                                                                                                                                                                                     DE P 42 44 541.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/471,770
                                                                                                                                                                                                                                                                                                                          32,220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ه</u>
                                                                                                                                                                                                                                                                                                                                                                                        43
                                                                                            Score 40; DB Pred. No. 44;
                                                                                                                                                                                                                                                                                                               05495-0001-03000
                                                                                                                                                                                                                                                                                                                                                                                        18 186.4
                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from the HIV Group and
                                                                                                          DB 1;
                                                                                                          Length 498;
                                                                              7; Indels
                                                                              0;
```

QΥ

Gaps

0

```
В
                                                                                                                         ; MOLECULE TYPE: FRAGMENT TYPE: US-08-468-059-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-08-468-059-59
                                                             Matches
                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                         REGISTRATION NUMBER: 32,220
REFERENCE/DOCKET NUMBER: 05495-0001-02000
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
    119
                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: DE P 42 44 541.8
FILING DATE: 30-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                             Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/132,653
FILING DATE: 05-OCT-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                         2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                RIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 22-OCT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                        NAME: Carol P. Einaudi
REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 06-JU CLASSIFICATION: 43
                                                                                                                                                                                                ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1300 I S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & ADDRESSEE: Dunner
EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                   amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D.C
                                                                                                                                                                                             498 amino acids
                                                                                                                                                                                                                                            202-408-4400
                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/08468059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1300 I Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hauser, Hans-Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brunn, Albrecht v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eberle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Guertler, Lutz G.
                                                                                                                                      internal
                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                     UMBER: DE P 43 18 186.4
01-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                             JMBER: DE P 42 35 718.7
22-OCT-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JMBER: DE P 42 33 646.5
06-OCT-1992
                                                                       49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Retrovirus from the HIV Group and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/468,059
                                                                                                                                                                                                                             59:
                                                                     Score 40; DB
Pred. No. 44;
                                                       Mismatches
                                                                                    <u>ب</u>
                                                                                  Length 498
                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Its
                                                     0,
                                                   Gaps
                                                  0
```

RESULT 5

FOR SEQ ID NO:

20

```
RESULT 6
US-08-624-125-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; LENGTH: 498
; TYPE: PRT
; ORGANISM: Human immunodeficiency virus
US-09-109-916-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 20, Approx No. 5744341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-109-916-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EARLIER FILING DATE: 1993-06-01 NUMBER OF SEQ ID NOS: 67
           REFERENCE/DOCKET NUMBER: 27
TELECOMMUNICATION INFORMATION: 703-413-3000
                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EARLIER APPLICATION NUMBER: DE P 42 33 646.5
EARLIER FILING DATE: 1992-10-06
EARLIER APPLICATION NUMBER: DE P 42 35 718.7
                                                          ATTORNEY/AGENT INFORMATION:
NAME: KELBER, STEVEN B.
REGISTRATION NUMBER: 30,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EARLIER APPLICATION NUMBER: DE EARLIER FILING DATE: 1992-12-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Hauser, Hans-Peter
TITLE OF INVENTION: RETROVIRUS FROM HIV GROUP AND ITS USE
FILE REFERENCE: 05495.0001-04
                                                                                                                                                                                                                    MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EARLIER APPLICATION NUMBER: DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EARLIER FILING DATE: 1992-10-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: GENES OF CAROTENOID BIOSYNTHESIS AND TITLE OF INVENTION: METABOLISM AND A SYSTEM FOR SCREENING SUCH GENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119 EETSPROTSONYPIVTNA 136
                                                                                                        APPLICATION NUMBER: US/0
FILING DATE: 29-MAR-1996
CLASSIFICATION:
                                                                                                                                                                                                                                                         COUNTRY: U.ZIP: 22202
                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e 59,
6277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/109,916 FILING DATE: 1998-07-02
                                                                                                                                                                                                                                                                                                    ARLINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                        ٧A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08624125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eberle, Josef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Guertler, Lutz G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brunn, Albrecht V.
703-413-2220
                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09109916
                                                                                                                                                                                                                                                                                                                                                                                                                                                CUNNINGHAM JR., FRANCIS X.
                                                                                                                                                                                                                                                                                                                                                                                                                                  SUN, ZAIREN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                        55 p.C.
                                                                                                                                                                                                                                                                                                                                                  OBLON,
                                                                                                                                                                                                                                                                                                            JEFFERSON DAVIS HIGHWAY, SUITE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49.48;
                                                                                                                                                                                                                                                                                                                                                  SPIVAK,
                                                                                                                                     US/08/624,125
                                                        30,073
                                          2747-063-27
                                                                                                                                                                                                                                                                                                                                           MCCLELLAND, MAIER & NEUSTADT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P 43 18 186.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P 42 44 541.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

0;

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-624-125-20
RESULT 8
US-09-419-163-4
; Sequence 4, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IS-08-679-635A-4
                                                                                    B
                                                                                                                                                                                                                 US-08-679-635A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4, Application US/08679635A batent No. 5985643
                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                               TELEFAX: 201-343-1684
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 456 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Tomasz, Alexander
APPLICANT: Delencastre, Herminia
APPLICANT: Delencastre, Herminia
TITLE OF INVENTION: AUXILIARY GENES AND PROTEINS OF
TITLE OF INVENTION: METHICILLIN RESISTANT BACTERIA AND ANTAGONISTS THEREOF
NUMBER OF SEQUENCES: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336 TLAAAPVVANA 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           y Match 45.7%;
Local Similarity 72.7%;
hes 8; Conservative
                                                                                                                                                                                                                                   MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 411 Ha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9 TAAXAPVVXNA 19;
                                                                                  382 TTAAAAPLVQTA 393
                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 600-1-141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0 FILING DATE: 10:JUL-1996 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                ENGTH:
                                                                                                                   œ
                                                                                                                   TTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hackensack
                                                                                                                                                   Similarity
8; Conser
                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New Jersey
     Application US/09419163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: David A. Jackson, Esq.
411 Hackensack Ave, Continental Plaza, 4th
                                                                                                                                                                                                                                                                                                                  463 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acids
                                                                                                                                                                     45.7%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/679,635A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 37; DB 1;
Pred. No. 1.3e+0
                                                                                                                                                       1; Mismatches
                                                                                                                                                                                      Score 37;
                                                                                                                                                                      Score 37; DB 2;
Pred. No. 1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 456;
                                                                                                                                                                                        Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                            0;
                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                              0;
```

```
; MOLECULE TYPE: p:
; HYPOTHETICAL: NO
US-09-419-163-4
                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                             RESULT 9
US-08-943-173-8
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Thes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                         Sequence 8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: AUXILIARY GENES AND PROTEINS OF TITLE OF INVENTION: METHICILLIN RESISTANT BACTERIA AND ANTAGONISTS THEREOF NUMBER PEQUENCES: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/419,163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Tomasz, Alexander APPLICANT: Delencastre, Herminia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 463 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                                                 TITLE OF INVENTION: PEPTIDES DERIVED
TITLE OF INVENTION: FROM THE NON-STRUCTURAL PROTEINS OF
TITLE OF INVENTION: FOOT AND MOUTH DISEASE VIRUS AS
TITLE OF INVENTION: DIAGNOSTIC REAGENTS
                                                                                                                                                                                                     APPLICANT: Wang, Chang Yi
APPLICANT: Shen, Fan
APPLICANT: Chen, Pei De
                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: Floor
CITY: Hackensack
STATE: New Jersey
                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                             382 TTAAAAPLVQTA 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 07601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS: single
                           CITY: New York
STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                              8 TTAAXAPVVXNA 19
                                                                   STREET:
            COUNTRY:
                                                                                  ADDRESSEE:
10154-0053
                                                                                                                                                                                                                                                                                6048538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                           Application US/08943173

    David A. Jackson, Esq.
    Hackensack Ave, Continental Plaza, 4th

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                   345 Park Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                    Maria C.H. Lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 08/679,635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600-1-141
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 37; DB 4;
pred. No. 1.3e+02;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
TELEFAX: 212-732 TELEFAX: 212-732 TELEFAX: 212-732 TELEFAX: 10 SEQUENCE CHARACTERISTICS: 150 MILTO ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
""" B; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-943-173-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-943-173-8
                                                          CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Lin, Maria C.H.
REGISTRATION UNMBER: 29,323
REFERENCE/DOCKET NUMBER: 1151
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-758-4800
TELEPAX: 525-53-6849
TNECOMMUNICATION:
                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-LOSS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/943,173
ETLING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: PEPTIDES DERIVED
TITLE OF INVENTION: FROM THE NON-STRUCTURAL PROTEINS OF
TITLE OF INVENTION: FOOT AND MOUTH DISEASE VIRUS AS
TITLE OF INVENTION: DIAGNOSTIC REAGENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 19 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wang, Chang SAPPLICANT: Shen, Fan APPLICANT: Chen, Pel De
                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC COMPBILIDE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDDERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/943,173
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: L1D, Maria C.H.
REGISTRATION NUMBER: 29,323
REFERENCE/DOCKET NUMBER: 11:
                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 10154-0053
                                                                                                                                                                                                                                                                                                                                                                        STATE:
                                                                                                                                                                                                                                                                                                                                                                                  CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-758-4800
TELEFAX: 212-751-6849
                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ERQKPLKVKAKAPVV 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      048538 NPPLICATION US/08943173
                                                                                                                                                                                                                                                                                                                                                                  ΝY
                                                                                                                                                                                                                                                                                                                                                                                               8: Maria C.H. Lin
345 Park Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wang, Chang Y1
Shen, Fan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.48;
                                                                                                                                                                                                             US/08/943,173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.
                                                                                                              1151-4152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 36;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1151-4152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
```

```
RESULT 12
US-09-117-257-19
                                                                                                                          밁
                                                                                                                                               Qy
                                                                                                                                                                                                                         ; TOPOLOGY: 11; MOLECULE TYPE: US-08-943-173-2
                         GENERAL INFORMATION:
                                         Sequence 19, Application US/09117257
Patent No. 6214355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-943-173-16
                                                                                                                                                                       Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γΩ
                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-943-173-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
APPLICANT: Hook, Magni
APPLICANT: Guo, Betty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2,
Patent No.
                                                                                                                                                                                                                                                                                 TELEPHONE: 212-758-480
TELEFAX: 212-751-6849
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: PEP
TITLE OF INVENTION: FRO)
TITLE OF INVENTION: FOO
TITLE OF INVENTION: DIAM
NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 29,323
REFERENCE/DOCKET NUMBER: 11:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-758-4800
                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Lin, Maria C.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                        31
                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                          2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 10154-0053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Maria C.H. Lin
STREET: 345 Park Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31 ERQKPLKVKAKAPVV 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity hes 8; Conserv
                                                                                                                  EROKPLKVKAKAPVV 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No. 6048538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΝY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08943173
                                                                                                                                                                                                                                                                       71 amino acids
                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shen,
                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
               Magnus
                                                                                                                                                                                                                                    peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pei De
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chang Yi
                                                                                                                                                                               44.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRETIDES DERIVED FROM THE NON-STRUCTURAL PROTEINS OF FROM THE MOUTH DISBASE VIRUS AS DIAGNOSTIC REAGENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.48;
                                                                                                                                                                                                                                                                                                                                                                                                                              US/08/943,173
                                                                                                                                                                              Score 36; DB 3;
Pred. No. 22;
                                                                                                                                                                                                                                                                                                                                                    1151-4152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 36; DB
Pred. No. 18;
1; Mismatches
                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                6;
                                                                                                                                                                                        Length 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 58
                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
FILE OF INVENTION: DbpA AND DbpB COMPOSITIONS AND METHODS OF USE
FILE REFERENCE: 4210.000500
CURRENT APPLICATION NUMBER: US/09/117,257
CURRENT FILING DATE: 1998-07-22
EARLIER APPLICATION NUMBER: CT/US96/17081
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER FILING DATE: 1996-01-22
EARLIER FILING DATE: 1996-01-22
EARLIER FILING DATE: 1995-01-23
EARLIER FILING DATE: 1995-04-24
NUMBER OF SEQ ID NOS: 66
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; LENGTH: 181
TYPE: PRT
; ORGANISM: Borrelia afzelii
US-09-117-257-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
US-08-945-476-19
                                                                                                                                                                                                                                                             , MOLECULE TYPE: protein US-08-945-476-19
                                                  RESULT 14
US-09-489-352-19
                                                                                                                       망
                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence 19, Application US/08945476 Patent No. 6248517 GENERAL INFORMATION:
GENERAL INFORMATION:
             sequence 19, Application US/09489352 Patent No. 6312907
                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                FILING DATE: 24-APR-1995
INFORMATION FOR SEQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
LENGTH: 181 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
TITLE OF INVENTION: MET
TITLE OF INVENTION: MET
NUMBER OF SEQUENCES: 27
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/589,711
FILING DATE: 22-JAN-1996
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              139 EKTPTTTAEGIITIAKA 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 44.48;
Local Similarity | 47.18;
les 8; Conservative
                                                                                                                         139
                                                                                                                                                                                                                                                                                                LENGTH: 181 amino TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/945,476
                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 08/427,023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                             Local Similarity 47.1 les 8; Conservative
                                                                                                                                                     3 EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EKTPLTTAAXAPVVXNA 19
                                                                                                                         EKTPTTTAEGIITIAKA 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DECORIN BINDING PROTEIN COMPOSITIONS METHODS OF USE
                                                                                                                                                                                                                44.48;
47.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 36;
Pred. No.
                                                                                                                                                                                                                 Score 36;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.30 (EPO)
                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 181;
                                                                                                                                                                                                                                      Length 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                            0;
```

```
CURRENT APPLICATION NUMBER: US/09/489,352
CURRENT FILING DATE: 2000-01-21
EARLIER APPLICATION NUMBER: PCT/US96/17081
EARLIER FILING DATE: 1996-10-22
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER FILING DATE: 1996-01-22
EARLIER APPLICATION NUMBER: 08/427,023
EARLIER FILING DATE: 1995-04-24
NUMBER: 08/427,023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
US-09-117-257-48
US-09-117-257-48; Sequence 48, Application US/09117257; Sequence 6214355
parent No. 6214355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Borrelia afzelii
US-09-489-352-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                    ORGANISM: Borrelia afzelii US-09-117-257-48
                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver.
SEQ ID NO 19
LENGTH: 181
Search completed: March 14, 2003, 09:13:13 Job time : 15 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 47.1 Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Hook, Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Hook, Magnus
APPLICANT: Hook, Betty
APPLICANT: Hanson, Mark
TIPLE OF INVENTION: DbpA AND DbpB COMPOSITIONS AND METHODS OF USE
FILE REFERENCE: 4210.000500
                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 48
                                                                                                                                                                    Query Match 44.4
Best Local Similarity 47.1
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: GOO, Mark
APPLICANT: Hanson, Mark
APPLICANT: Hanson, Mark
APPLICANT: Hanson, Mark
APPLICANT: Hanson, Mark
FITLE OF INVENTION: DbpA AND DbpB COMPOSITIONS AND METHODS OF USE
FILE REFERENCE: 4210.000500
CURRENT APPLICATION NUMBER: US/09/117,257
CURRENT FILING DATE: 1998-07-22
EARLIER FILING DATE: 1996-10-22
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER APPLICATION NUMBER: 08/589,711
EARLIER APPLICATION NUMBER: 08/589,712
EARLIER APPLICATION NUMBER: 08/589,713
EARLIER APPLICATION NUMBER: 08/427,023
EARLIER FILING DATE: 1996-01-22
EARLIER FILING DATE: 1995-04-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Guo, Betty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 66
                                                                                                                                                                                                                                                                                               LENGTH: 18
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     139 EKTPTTTAEGIITIAKA 155
                                                                                  139 EKTPTTTAEGIITIAKA 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 EKTPLTTAAXAPVVXNA 19
                                                                                                                        3 EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Magnus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44.48;
                                                                                                                                                                                             44.48;
47.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 36; DB pred. No. 65;
                                                                                                                                                                                               Score 36;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                               Mismatches
                                                                                                                                                                                                      65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 181;
                                                                                                                                                                                                                          Length 182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                        0;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fotal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein -
               score
and is
                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                            19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
              No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein search, using sw model
                                                                                                                                                                                                                                                   Query
          199416 seqs, 46092074 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 14, 2003, 09:12:34; Search time 13 Seconds (without alignments) 67.365 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-359-426C-2
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 XEEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                 //ggn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
//ggn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
//ggn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
//ggn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
//ggn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
//ggn2_6/ptodata/2/pubpaa/US10_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Published_Applications_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                             Length DB
          498
498
498
498
155
155
155
233
395
229
261
277
261
277
200
200
          10
10
10
10
10
10
10
10
10
10
   .2 US-10-078-929-22

.2 US-10-078-929-198

.0 US-99-815-242-11701

) US-09-816-150-59

) US-09-886-159-59

) US-09-886-159-59

) US-09-886-159-59

10 US-09-952-432A-15

9 US-09-952-432A-15

9 US-09-952-432A-19

10 US-09-952-432A-21

10 US-09-866-562-92

9 US-09-764-846-214

10 US-09-323-998D-29

10 US-09-323-998D-29

10 US-09-323-998D-59

10 US-09-323-998D-59
                                                                                                                                                           99912
                                                                                                                                                                                                                                                             IJ
                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199416
Sequence 22, Appl
Sequence 198, App
Sequence 59, Appl
Sequence 16, Appl
Sequence 16, Appl
Sequence 19, Appl
Sequence 21, Appl
Sequence 214, Appl
Sequence 20, Appl
Sequence 50, Appl
Sequence 57, Appl
Sequence 58, Appl
Sequence 58, Appl
Sequence 58, Appl
                                                                                                                                                                                                                                               Description
```

RESULT 1 US-10-078-: Sequence Patent N. GENERAL: APPLICAN BATTOR APP ARIOR FI PRIOR APP ARIOR FI PRIOR APP ARIOR FI PRIOR APP ARIOR FI PRIOR APP ARIOR AP	4444433333332222222 44443388 5443376
929-22 22, A 22, A 22, A 22, A 21: F	3 5 3 3 3 4 4 4 4 4 5 7 7 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9
ppplication 0020152497 ATTON: ATTON: ATTON: Alao, Save akai, Haji amodu, Omo dell, Joan neyers, Bla inforpe, Carlon Nurion: St. Bla inforpe, Carlon Nurion: St. Bla inforpe, Carlon Number: 2000 St. Bla inforpe, Carlon Number: 1999-100 Number: 1999-170N Number: 1999	44444444444444444444444444444444444444
tion US/10 2497A1 2497A1 2497A1 2497A1 2497A1 2497A1 2 2497A1 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 2000-10 2 20	501 175 29 136 182 548 548 577 826 826 826 826 826 826 826 826 826 826
10078 10078 10078 100 100 100 100 100 100 100 10	
929 Fragments Encoding onse 0/078,929 0/078,929 138 138 138	US-09-323-998D-55 US-09-925-301-964 US-09-864-761-46598 US-09-864-761-46598 US-09-738-626-6738 US-09-738-626-6738 US-09-738-626-23-3648 US-09-988-626-222 US-09-988-626-222 US-09-988-626-222 US-09-988-627-22 US-09-988-627-22 US-09-988-687-226 US-09-986-846-31 US-09-861-289-31 US-09-864-761-4350 US-09-9847-102A-136 US-09-952-432A-17
Proteins Involved in	Sequence 55, Appl Sequence 42335, App Sequence 46598, App Sequence 46598, App Sequence 4781, App Sequence 4, Appl1 Sequence 4, Appl1 Sequence 3648, App Sequence 222, App Sequence 222, App Sequence 224, Appl1 Sequence 224, Appl1 Sequence 224, Appl1 Sequence 234, Appl1 Sequence 236, App Sequence 236, App Sequence 236, App Sequence 639, Appl Sequence 6439, App Sequence 6439, App Sequence 6439, Appl Sequence 65, Appl1 Sequence 66, Appl1 Sequence 66, Appl1 Sequence 17, Appl

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Oryza sativa US-10-078-929-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
US-10-078-929-198
                                              RESULT 3
US-09-815-242-11701
; Sequence 11701, Application US/09815242
; Patent No. US20020061569A1
                                                                                                                                               Дb
                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                               ; ORGANISM: Oryza sativa
US-10-078-929-198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 50.6%;
Best Local Similarity 50.0%;
Matches 9; Conservative
                            GENERAL INFORMATION:
                                                                                                                                                                                                               Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No.
                                                                                                                                                                                                                                                                                                                               SOFTWARE: Microsoft Office 97
SEQ ID NO 198
LENGTH: 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Nucleic Acid Fragments Encoding Proteins Involved in TITLE OF INVENTION: Stress Response FILE REFERENCE: BB1357 US NA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Rafalski, Antoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/133042
PRIOR FILING DATE: 1999-05-07
PRIOR APPLICATION NUMBER: 60/133427
PRIOR FILING DATE: 1999-05-11
PRIOR FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/137667 PRIOR FILING DATE: 1999-06-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/133437
PRIOR FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/133038 PRIOR FILING DATE: 1999-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: 09/566,394 PRIOR FILING DATE: 2000-05-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/078,929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97 EAAPPTTTAAEAPAIAAA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/
FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/133438 FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/133428
FILING DATE: 1999-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198,
                                                                                                                                                 EAAPPTTTAAEAPAIAAA 114
                                                                                                                                                                            EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98, Application US/10078929
US20020152497A1
                                                                                                                                                                                                               | Similarity
| 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Famodu, Omorayo
Odell, Joan T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sakai, Hajime
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Miao, Guo-Hua
Haselbeck, Robert
Ohlsen, Kari L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thorpe, Catherine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Meyers, Blake
                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zude
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saverio Carl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Omolayo O.
                                                                                                                                                                                                                                   50.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/133436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB 12; Length 132; Pred. No. 3:6;
                                                                                                                                                                                                                                   Score 41; [
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                   DB 12;
3.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8;
                                                                                                                                                                                                                                                        Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                          0;
```

```
; ORGANISM: Klebsiella pneumoniae US-09-815-242-11701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRENT FILING DATE: 2001-03-21
CURRENT FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/2106,848
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-886-156-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
SOFTWARE: PatentIn Ver. SEQ ID NO 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
TITLE OF IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Identification of Essential Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/815,242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: 60/269,308 PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE REFERENCE: ELITRA.011A
                                                                                                                                        PRIOR APPLICATION NUMBER: US/09/109,916
PRIOR FILING DATE: 1998-07-02
PRIOR APPLICATION NUMBER: DE P 42 33 646.5
PRIOR FILING DATE: 1992-10-06
PRIOR APPLICATION NUMBER: DE P 42 35 718.7
PRIOR FILING DATE: 1992-10-22
PRIOR FILING DATE: 1992-10-22
                                                                                                                                                                                                                                                                  APPLICANT: Hauser, Hans-Peter
TITLE OF INVENTION: RETROVITUS FROM HIV GROUP AND
FILE REFERENCE: 05495.0001-04
CURRENT APPLICATION NUMBER: US/09/886,156
CURRENT FILING DATE: 2001-06-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 14110
                                                                                PRIOR APPLICATION NUMBER: DE P 42 44 541.8 PRIOR FILING DATE: 1992-12-30 PRIOR APPLICATION NUMBER: DE P 43 18 186.4
                                         NUMBER OF SEQ ID NOS: 67
                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Guertler, Lutz
                                                                   PRIOR FILING DATE: 1993-06-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 EQKTPLTAADMAAI 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 EEKTPLTTAAXAPV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/253,625 FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 60/257,931 FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59, Application US/09886156
). US20020155428A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xu, H. Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yamamoto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Carr, Grant J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zyskind, Judith W
                                                                                                                                                                                                                                                                                                                                                                                         Brunn, Albrecht V.
                                                                                                                                                                                                                                                                                                                                                                          Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                 Eberle, Josef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Robert T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49.48;
57.18;
                            2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                           G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 40; DB 10;
Pred. No. 22;
2; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 445;
                                                                                                                                                                                                                                                                                                                                              ITS USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

0;

; ORGANISM: Human immunodeficiency virus US-09-886-156-59

LENGTH: 498

```
APPLICANT: HAUSEY, HARS-PETER
TITLE OF INVENTION: RETROVIRUS FROM HIV GROUP AND ITS USE
FILE REFERENCE: 05495.0001-04
CURRENT APPLICATION NUMBER: US/09/886,149
CURRENT APPLICATION NUMBER: US/09/916
PRIOR APPLICATION NUMBER: 09/109,916
PRIOR FILING DATE: 1998-07-02
PRIOR FILING DATE: 1998-07-02
PRIOR APPLICATION NUMBER: DE P 42 33 646.5
PRIOR APPLICATION NUMBER: DE P 42 35 718.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Thes 8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT
; ORGANISM: Human immunodeficiency virus
US-09-886-150-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                        US-09-886-149-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-886-150-59
                                                                                                                                                                                                                                                                                                                                 Sequence 59, Application US/09886149 Publication No. US20030003442A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 49.4
Best Local Similarity 44.4
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 59, Application US/09886150 Patent No. US20020172939A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                           APPLICANT: Guertler, Lutz G. APPLICANT: Eberle, Josef
                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 09/109,916
PRIOR FILING DATE: 1998-07-02
PRIOR APPLICATION NUMBER: DE P 42 33 646.5
PRIOR FILING DATE: 1992-10-06
PRIOR APPLICATION NUMBER: DE P 42 35 718.7
PRIOR FILING DATE: 1992-10-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Knapp, Stefan
APPLICANT: Hauser, Hans-Peter
TITLE OF INVENTION: RETROVITUS FROM HIV GROUP
FILE REFERENCE: 05495.0001-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Guertler, APPLICANT: Eberle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: DE P 42 44 541.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/886,150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119 EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 1992-12-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: DE P 43 18 186.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eberle, Josef
Brunn, Albrecht V.
Knapp, Stefan
                                                                                                                                                                                                                                                     Brunn, Albrecht V.
Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1993-06-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lutz G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>س</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 40;
Pred No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ů.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 40; DB
Pred. No. 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND ITS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                            US-09-952-432A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Human immunodeficiency virus US-09-886-159-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-886-159-59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-886-149-59
                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                    Sequence 2, Application US/09952432A Patent No. US20020150588A1
                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: POSEQ ID NO 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                         APPLICANT: Allison, James P.
APPLICANT: Fasso, Marcella
APPLICANT: Shastri, Nilabh
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: SPAS-1 CANCER ANTIGEN
FILE REFERENCE: 0.18941-001110US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 59, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
CURRENT APPLICATION NUMBER: US/09/952,432A CURRENT FILING DATE: 2002-04-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: DE P
PRIOR FILING DATE: 1993-06-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Guertler, Lutz G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 49
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 498
                                                                                                                                                                                                                                                                                   119 EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                               Local Similarity es 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                       2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EETSPROTSONYPIVTNA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eberle, Josef
Brunn, Albrecht V.
Knapp, Stefan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/09886159
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US20030003443A1
                                                                                                                                                                                                                                                                                                                                                                            49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω,
                                                                                                                                                                                                                                                                                                                                                               Mismatches
```

```
PRIOR APPLICATION NUMBER: DE P 43 18 186.4 PRIOR FILING DATE: 1993-06-01 NUMBER OF SEQ ID NOS: 67
                                                                  ORGANISM: Human immunodeficiency virus
               Score 40;
Pred. No.
Mismatches
                            DB
                            9;
                         Length 498
 Indels
 0
Gaps
0,
```

CURRENT APPLICATION NUMBER: US/09/886,159
CURRENT FILING DATE: 2001-06-22
PRIOR APPLICATION NUMBER: US/09/109,916
PRIOR FILING DATE: 1998-07-02
PRIOR APPLICATION NUMBER: DE P 42 33 646.5
PRIOR FILING DATE: 1992-10-06
PRIOR APPLICATION NUMBER: DE P 42 35 718.7
PRIOR APPLICATION NUMBER: DE P 42 35 718.7
PRIOR FILING DATE: 1992-10-22
PRIOR FILING DATE: 1992-10-30
PRIOR FILING DATE: 1992-12-30 APPLICANT: Hauser, Hans-Peter
TITLE OF INVENTION: RETROVIRUS FROM HIV GROUP
FILE REFERENCE: 05495.0001-04 Score 40; Pred. No. 43 18 186.4 25; 9 AND Length 498;

Indels

0

Gaps

0

```
; OTHER INFORMATION: bescription of Artificial Sequence:Predicted ; OTHER INFORMATION: sequence of mouse SPAS-1 US-09-952-432A-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-952-432A-2
                                                                                                                                                                                                                                                               RESULT 10
US-09-738-626-5663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-952-432A-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Ver. 2.1 SEQ ID NO 2
                                                                                                                                                                                                            Sequence 5663, Application US/09738626 Publication No. US20020197605A1 GENERAL INFORMATION: |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 16, Application US/09952432A Patent No. US20020150588A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 8; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 16
LENGTH: 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Shastri, Nilabh
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: SPAS-1 CANCER ANTIGEN
FILE REFERENCE: 018941-001110US
CURRENT APPLICATION NUMBER: US/09/952,432A
CURRENT FILING DATE: 2002-04-15
PRIOR APPLICATION NUMBER: 60/234,472
PRIOR APPLICATION NUMBER: 60/234,472
PRIOR FILING DATE: 2000-09-21
NUMBER OF SEO ID NOS: 32
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 2000-09-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Allison, James P. APPLICANT: Fasso, Marcella
                                                                                                                                                                                           APPLICANT: NAKAGAWA, SATOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 32
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES FILE REFERENCE: 249-125
                                                                                                                         APPLICANT:
                                                                                                                                         APPLICANT: APPLICANT:
                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 155
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                       APPLICANT:
                                                                                        APPLICANT:
                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: Description of Artificial Sequence: SPAS-1 cDNA
                                      APPLICANT:
                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                   60 SPTTTAATMPVV 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60 SPTTTAATMPVV 71
                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity es 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 TPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                         5 TPLTTAAXAPVV 16
                                                                                                     HAYASHI, MIKIRO
OCHIAI, KEIKO
YOKOI, HARUHIKO
                                    OZAKI, AKIO
                                                                                        TATEISHI, NAOKO
                                                                                                                                                                           MIZOGUCHI, HIROSHI
                                                                    SENOH, AKIHIRO
                                                     IKEDA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                              SEIKO
                                                     MASATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               James P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                            48.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60/234,472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 39; L
Pred. No. 9.
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 39; DB Pred. No. 9.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
9.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
APPLICANT: Allison, James P.
APPLICANT: Fasso, Marcella
APPLICANT: Fasso, Marcella
APPLICANT: Shastri, Nilabh
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: SPAS-1 CANCER ANTIGEN
FILE REFERENCE: 018941-0011109S
CURRENT APPLICATION NUMBER: US/09/952,432A
CURRENT APPLICATION NUMBER: US/09/952,432A
CURRENT FILING DATE: 2002-04-15
PRIOR FILING DATE: 2000-09-21
PRIOR FILING DATE: 2000-09-21
NUMBER OF SEQ. ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; FEATURE:
; OTHER INFORMATION: Tumor SPAS-1
US-09-952-432A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-738-626-5663
                                                                                                                                                                                                                                                              RESULT 12
US-09-952-432A-21
                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-952-432A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 5663
LENGTH: 233
TYPE: PRT
                GENERAL INFORMATION:
APPLICANT: Allison, James P.
APPLICANT: Fasso, Marcella
APPLICANT: Shastri, Nilabh
APPLICANT: Shastri, Nilabh
APPLICANT: The Regents of the University of California
TITLE OF INVENTION: SPAS-1 CANCER ANTIGEN
FILE REFERENCE: 018941-001110US
CURRENT APPLICATION NUMBER: US/09/952,432A
CURRENT FILING DATE: 2002-04-15
CURRENT FILING DATE: 2002-04-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 19
LENGTH: 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 19, Application US/09952432A
Patent No. US20020150588A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                  Sequence 21, Application US/09952432A Patent No. US20020150588A1
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 48.1%;
Best Local Similarity 66.7%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR FILING DATE: 2000-04-07
PRIOR FILING DATE: 2000-04-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn ver. 3.0
PRIOR APPLICATION NUMBER: 60/234,472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Corynebacterium glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                  300 SPTTTAATMPVV 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35 TPTTSASPAPVV 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 TPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                            5 TPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 39; DB Pred. No. 16; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 39; DB Pred. No. 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
APPLICANT: HAYASHI, KEIKO
APPLICANT: OCHIAI, KEIKO
APPLICANT: YOKOI, HARUHIKO
APPLICANT: TATEISHI, NAOKO
APPLICANT: TATEISHI, NAOKO
APPLICANT: IKEDA, MASATO
APPLICANT: IKEDA, MASATO
APPLICANT: OZAKI, AKIO
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERBRICE: 249-125
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: US/09/738,626
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
                                                                                                                                                                                                                                                                                                                                                  US-09-738-626-5209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Homo sapiens
US-09-866-562-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT; ORGANISM: Artificial Sequence; FEATURE; FEATURE; OTHER INFORMATION: No. US20020150588Almal SPAS-1US-09-952-432A-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                   Sequence 5209,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 96
SEQ ID NO 92
LENGTH: 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESULT 13
IS-09-866-562-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 66.7
                                                                                                                                                                                                                                          APPLICANT: NAKAGAWA, SATOSHI
APPLICANT: MIZOGUCHI, HIROS
APPLICANT: ANDO, SEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence 92, Application US/09866562 Patent No. US20020009758A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 2000-09-21
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PATENTIN VER. 2.1
SEQ ID NO 21
LENGTH: 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: SWILZER, AND TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY TITLE OF INVENTION: AND DIAGNOSIS OF LUNG CANCER.

FILE REFERENCE: 210121.502

CURRENT APPLICATION NUMBER: US/09/866,562

CURRENT FILING DATE: 2001-05-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 92,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Harlocker, Susan L.
APPLICANT: Wang, Tongtong
APPLICANT: Bangur, Chaitanya S.
APPLICANT: Klee, Jennifer
APPLICANT: Switzer, Anne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
                                                                                                                                                                                                                                                                                                                  lcation No.
                                                                                                                                                                                                                                                                                                                                                                                                                 109 EKTPLKTTATPLSPLKPPRMDTAPVVAS 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300 SPTTTAATMPVV 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 EKTPLTTAA-----XAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 TPLTTAAXAPVV 16
                                                                                                                                                                                                                                                            MIZOGUCHI, HIROSHI
                                                                                                                                                                                                                                                                                                             Application US/09738626
. US20020197605A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
NUMBER: JP 00/159162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38; DB
Pred. No. 23;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 39; DE
Pred. No. 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 229;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۳,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

밁

120 TPVRPAAASPIVSGA 134

```
δÃ
                                                                                  US-09-764-846-214
                            Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Corynebacterium glutamicum US-09-738-626-5209
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Ver.
SEQ ID NO 214
LENGTH: 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 214, Application US/09764846 Patent No. US20020102638A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn ver.
SEQ ID NO 5209
LENGTH: 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Nucleic Acids, Proteins, FILE REFERENCE: PTZ12 CURRENT APPLICATION NUMBER: US/09/764,846 CURRENT FILING DATE: 2001-01-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Prior application data removed - consult PALM or file wrapper NUMBER OF SEQ ID NOS: 348
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Rosen et al.
                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Homo s
FEATURE:
                                                                                         LOCATION: (277)
OTHER INFORMATION:
                                                                                                                      NAME/KEY: SITE
                                                                                                                                 OTHER INFORMATION: Xaa
                                                                                                                                                            OTHER INFORMATION:
NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                    NAME/KEY: SITE LOCATION: (7)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-764-846-214
                                                                                                                                                  LOCATION:
                                                                                                                                                                                        NAME/KEY: SITE
LOCATION: (268)
                                                                                                                                                                                                                 OTHER INFORMATION:
                                                                                                                                                                                                                               NAME/KEY: SITE
LOCATION: (261)
                                                                                                                                                                                                                                                       OTHER INFORMATION:
                                                                                                                                                                                                                                                                                            OTHER INFORMATION: Xaa
                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: SITE LOCATION: (6)
OTHER INFORMATION: Xaa
                                                                                                                                                                                                                                                                     NAME/KEY: SITE
LOCATION: (254)
                                                                                                                                                                                                                                                                                                             NAME/KEY: SITE LOCATION: (8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 0
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 26
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    149 PLTTASASPV 158
5 TPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 PLTTAAXAPV 15
                            Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 7; Conserv
                                                                                                                                                  (275)
                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                            Xaa
                                                                                                                                                                          Xaa
                                                                                                                                                                                                                                                       Xaa
                                                                                                                                                                                                                 Xaa
                                                                                                                                                                                                                                                                                                                                     Xaa
                                    46.98;
                                                                                  equals any of the naturally occurring
                                                                                                                                                               equals any of the naturally occurring L-amino
                                                                                                                                equals
                                                                                                                                                                                                     equals any of the naturally occurring L-amino acids
                                                                                                                                                                                                                                                                                                                                                                equals any of the naturally occurring L-amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46.98;
                                                                                                                                                                                                                                                                                              equals
                                                                                                                                                                                                                                                                                                                                    equals
                                                                                                                                                                                                                                                      equals
                                    Score 38;
Pred. No.
                                    Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 00/280988
                                                                                                                                any of the
                                                                                                                                                                                                                                                    any
                                                                                                                                                                                                                                                                                      any of the naturally occurring
                                                                                                                                                                                                                                                                                                                          any of the naturally occurring L-amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38;
Pred. No.
                        Mismatches
                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                            the naturally occurring L-amino acids
                                   DB
29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
27;
                                                                                                                           naturally occurring
                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                              Length 2777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                   0;
                                                                                     L-amino
                                                                                                                           L-amino
                                                                                                                                                                                                                                                                                     L-amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                   acids
                                                                                                                                                                  acids
                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

Search completed: March 14, 2003, 09:16:49 Job time : 14 secs

Run

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   otal number of hits satisfying chosen parameters:
      39.50
39.50
39.39
38.59
38.59
38.59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω 4
.. ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
    US-09-359-426C-2
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 XEEKTPLTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               March 14, 2003, 09:10:24; Search time 18 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR_73:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           p1r2:*
p1r3:*
p1r4:*
                                          482
171
252
258
258
394
788
788
1360
405
486
507
527
1353
1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
A58663
AB0148
T33408
T33408
T28400
JC1273
AE0963
AF85436
S78543662
T44639
T74610757
T50779
S10772
S1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               αI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (without alignments)
101.475 Million cell updates/sec
      hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
growth-blocking pe
                                                                                         OHP1 protein - mai
2-hydroxymuconic s
aldehyde dehydroge
hypothetical prote
                                                                                                                                                      hypothetical prote hypothetical prote hypothetical prote hypothetical prote muscarinic acetylc hypothetical prote oHP1 protein mai
                                                                                                                                                                                                                                                                                              hypothetical prote
hypothetical prote
copper chaperone h
catalase (EC 1.11.
                                                                                                                                                                                                                                                                                                                                                                            hypothetical prote catalase (EC 1.11. catalase (EC 1.11.
                                                                                                                                                                                                                                                                                                                                                                                                                     ribosomal protein probable carbohydr hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical prote protein H34I24.2 [
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      catalase PA4236 [i
catalase (EC 1.11.
catalase (EC 1.11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                          RESULT
A58663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, LOTY, S.; Olson, M.V.
Nature 406, 959-964, 2000
A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an A;Reference number: A82950; MUID:20437337; PMID:10984043
A;Accession: B83113
A;Status: preliminary
A;Status: preliminary
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          catalase PA4236 [imported] - Pseudomonas aeruginosa (strain PAO1)
C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep_2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
B83113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В83113
```

45	44	43	42	41	40	39	. U	3 (4.7	3 4	) U	J (	J (	بر ند	32	31	30
37	37	37	37	37	37	37	37.5	85	) (L)	, u	, 0	ى د د	بر ع	38	ω 8	38
45.7	45.7	45.7	45.7	45.7	45.7	45.7	46.3	46.9	46.9	46.9	40.0		9	46.9	46.9	46.9
500	488	463	347	328	116	71	200	1679	747	695	504	1 (	77.2	532	474	348
2	N	N	N	N	ν	N	N	N	N	N	^		J	N	N	2
S72505	T42038	S72992	T35518	T01225	C83492	F72332	G86194	S48385	F88561	D71283	1.72203	LOTOTO	101010	S40983	E87650	·S40750
	-					- ,		hypothetical prote	protein F58A4.11	probable translati	hypothetical prote	peptidase (M3 fami	יין איייירידרמד ליוסרפ	Depot bot top   proto	peptidase M20/M25	hypothetical prote

## ALIGNMENTS

an

opportunistic

P.; Hickey, M.J., A.; Larbig, K.; I

```
A; Accession: BACCESSION: BACCESSION: BACCESSION: A; Molecule type: DNA
A; Residues: 1-305, 'AE' <BUZ2>
R; Gouet, P.; Jouve, H.M.; Dideberg, O.
Submitted to the Brookhaven Protein Data Bank, J
"""ference number: A67899; PDB:2CAE
"""" for a crystallography, The control of the Back of the Brookhaven Protein Data Bank, J
                                                                                                                                                                               A;Reference number: A5866;
A;Accession: A58663
A;Molecule type: protein
A;Residues: 1-484 <BUZI>
A;Accession: B58663
                                                                                                                                                                                                                                                            Cattalase (EC 1.11.1.6) [validated] - Proteus mirabilis C.Species: Proteus mirabilis A; Variety: Strain Pr, peroxide resistant C; Obte: 19-Nov-1997 #sequence_revision 21-Nov-1997 #text_change 15-Sep-2000 C; Accession: A58663; B59663 R; Buzy, A.; Bracchi, V.; Sterjiades, R.; Chroboczek, J.; Thibault, P.; Gagnon, J.; Protein Chem. 14, 59-72, 1995 A; Title: Complete amino acid sequence of Proteus mirabilis PR catalase. Occurrence A; Reference number: A58663; MUID:95305957; PMID:7786407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Genetics:
A;Gene: katA; PA4236
C;Superfamily: catal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA
A;Residues: 1-482 <5TO>
A;Cross-references: GB:AE004841; GB:AE004091; NID:g9950451; PIDN:AAG07624.1; GSPDB:GN
A;Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 EEKTPLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEKTRLTTAAGAPVVDN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 82.4
14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       catalase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77.8%;
82.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 63; DB 2;
Pred. No. 0.0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                            2.2 angstroms, residues 3-475
                                                                                  June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                of
```

```
R;Gouet, P.; Jouve, H.M.; Dideberg, O. submitted to the Brookhaven Protein Data Bank, A;Reference number: A67902; PDB:2CAH A;Contents: annotation; X-ray crystallography, A;Note: native Fe(III) with NADH R;Gouet, P.; Jouve, H.M.; Dideberg, O. J. Mol. Biol. 249, 933-954, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Title: Crystal structure of Proteus mirabilis PR catalase with A;Reference number: A58664; MUID:95311317; PMID:7791219 Contents: annotation; X-ray crystallography, 2.2 angstroms Complex: homotetramer Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the Brookhaven Protein Data Bank, R; Reference number: A67901; PDB:2CAG A; Contents: annotation; X:ray crystallography, A; Note: compound II, dithichtreitol reduced co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Gouet, P.; Jouve, H.M.; Hajdu, J. submitted to the Brookhaven Protein Data Bank, A;Reference number: A67900; PDB:2CAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;53/Modified site: methionine sulfone (Met) #status experimental F;54,93,127/Active site: His, Ser, Asn #status predicted F;337/Binding site: heme iron (TVT) /avial li-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Superfamily: catalase
C;Keywords: chromoprotein; heme; homotetramer; iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Note: compound I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A679 A; Contents: annotation;
RESULT 4
T33408
hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             catalase (EC 1.11.1.6) [imported] - Yersinia pestis (strain CO92) C;Species: Yersinia pestis (c;Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 27-Nov-2001 (c;Accession: AB0148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity,
"~+~hes 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Description: catalyzes the conversion of two of molecules of hydrogen A; Note: this enzyme has a tightly bound NADPH cofactor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Gouet, P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, I., M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barre ture 413, 523-527, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                    C; Superfami
C; Keywords:
                                                                                                                                                                                                                                                                                                                             C; Genetics
                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-480 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: AB0148
                                                                                                       당
                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB: AL590842;
                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                     Superfamily: catalase
                                                                                                                                                                                     Matches
                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ritle: Genome sequence of Yersinia pestis, the causative agent of plague
Reference number: AB0001; MUID:21470413; PMID:11586360
                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EKTPLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKKKLTTAAGAPVVDN
                                                                                                         KKKGLTTAAGAPV,VDN 19
                                                                                                                                               EKTPLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                      oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jouve, H.M.; Hajdu,
                                                                                                                                                                                                           Similarity
      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                       Conservative
        H34I24.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              x-ray crystallography,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          iron (Tyr) (axial ligand) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65.48;
75.08;
                                                                                                                                                                                                        59.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein Data Bank,
          Caenorhabditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                    PIDN:CAC90045.1;
                                                                                                                                                                                          1;
                                                                                                                                                                                                             Score 48; DB Pred. No. 1.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hy, 2.7 angstroms, compound I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
0.22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       June 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.7 angstroms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           June
            elegans
                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                      PID:g15979266; GSPDB:GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                angstroms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 484;
                                                                                                                                                                                                                              Length 480;
          (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      without bound NADP
                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3-475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3-475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peroxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              oxidoreducta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
E88400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
```

```
C:Species: Caenorhabditis elegans
C:Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change
C:Accession: T33408
R:Latreille, P.; Wamsley, P.; O'Brien, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               submitted to the EMBL Data Library, July 1998 A;Description: The sequence of C. elegans cosmid H34I24 A;Reference number: Z21340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Genome sequence of the nematode C. elegans: a platform for investigating bio A;Reference number: A75000; MUID:99069613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www_sanger.ac.uk/Projects/C_A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein H34I24.2 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 10-May_2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Map position:
A; Note: intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:AF078784; PIDN:AAC26925.1; GSPDB:GN00021; CESP:H34124.2
A;Experimental source: strain Bristol N2; clone H34124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-262 <LAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; anonymous,
Science 282,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: CESP: H34I24.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: T33408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: published errata appeared in Science 283, 35, 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-262 <STO>
A;Cross-references: GB:M89911; NID:g153436; PIDN:AAA26811.1; C;Superfamily: Escherichia coli ribosomal protein L12 C;Keywords: protein biosynthesis; ribosome
                                                                                                             A;Title: Cloning and sequence of a gene encoding the L7/L12 ribosomal protein A;Reference number: JC1273; MUID:92380478; PMID:1511874 A;Accession: JC1273
                                                                                                                                                                            C;Accession: JC1273
R;Parra, F.; Blanco, G.; Alonso, J.M.M.; Balbin, M.; Mendez, C.; Salas, J.A. Gene 118, 127-129, 1992
                                                                                                                                                                                                                        ribosomal protein L7/L12 - Streptomyces antibioticus
C;Species: Streptomyces antibioticus
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #
C;Accession: JC1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Gene: H34I24.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: E88400
                                                                   A; Molecule type: DNA
A; Residues: 1-128 < PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local s
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        190
                                                                                                                                                                                                                                                                                                                                                                                                         190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 KTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KTPLTSGSSARVINNA
                                                                                                                                                                                                                                                                                                                                                                                                       KTPLTSGSSARVINNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 KTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The C. elegans Sequencing Consortium. 2012-2018, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
9; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E88400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GB:chr_III; PIDN:AAC26925.1; PID:g3329614; GSPDB:GN00021; CESP:H3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                not resolved (incomplete sequence)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205
                                                                                                                                                                                                                                                                                                                                                                                                            205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46; DB 2;
Pred. No. 1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                    30-Sep-1993 #text_change 13-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                     PID:g153438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                   equival
```

```
RESULT 9
S37055
catalase
                                                                                                B
                                                                                                                          á
                                                                                                                                                                                                                                       A:Cross-references: GB:NC_001268; NID:g7270646; PIDN:CAB80363.1; C;Genetics: A:Gene: AT4g36970
                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein AT4936970 [imported] - Arabidopsis thallana
C:Specles: Arabidopsis thallana (mouse-ear cress)
C:Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 16-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
F85436
                                                                                                                                                                                                                         A; Map position: 4
                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-427 <STO>
                                                                                                                                                                                                                                                                                                                                    A;Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana A;Reference number: A85001; MUID:20083488; PMID:10617198
A;Accession: F85436
                                                                                                                                                                                                                                                                                                                                                                                C:Accession: F85436
R:anonymous, The European
Nature 402, 769-777, 1999
                                                                                                                                                                                                                                                                                                                   A: Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-306 <PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Attre 413, 848-852, 2001

A;Authors: Parry, C.; Quall, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, A;Tille: Complete genome sequence of a multiple drug resistant Salmonella enterica seaseference number: AB0502; PMID:11677608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           probable carbohydrate kinase STY3989 [imported] - Salmonella enterica subsp. enterica C:Species: Salmonella enterica subsp. enterica serovar Typhi A:Note: this species has also been called Salmonella typhi C:Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 27-Nov-2001 C:Accession: AE0953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: GB: AL513382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.;
th, T.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE0963
                                                                                                                                                          Matches
                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Superfamily: ribokinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S.; Moule,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity
Matches 10; Conserv
                                                                                          208 EEKAEMTTAMQSPVV 222
                                                                                                                                                          Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 EKVPCTSSGVAPIFVNA 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
les 8; Conserv
                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Connerton, P., C., S.; O'Gaora, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
               (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STY3989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                        EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EEKTPLTTAAXAPVV 16
     1.11.1.6) alpha-2 chain - Streptomyces violaceus
                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                         European Union Arabidopsis Genome Sequencing Consortium, The Cold
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                        54.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55.6%;
                                                                                                                                                     Score 44; DB
Pred. No. 7.1;
2; Mismatches
                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIDN:CAD03201.1; PID:g16504832; GSPDB:GN00176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 44; DB Pred. No. 4.9; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 45; DB
Pred. No. 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                    DB
7.1;
                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u>
                                                                                                                                                                                    Length 427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pickard, [
                                                                                                                                                   0
                                                                                                                                                                                                                                                                GSPDB:GN00140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D.; Wain, J.; Churcher, L.; White, N.; Farrar,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                           Sprin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>~</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
A44639
                                                 A; Map position:
                                                                                                                                                                                                                                                                                           T08462
                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ç
```

```
A; Molecule type: DNA
A; Residues: 1-321 <QUE>
A; Cross-references: EMB!
                                                                                                                                                                                                                                                  hypothetical protein F2206.250 - Arabidopsis thaliana C:Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 22-Oct-1999 C:Accession: T08462
                                                                                                               A: Experimental source: cultivar
                                                                                                                                                                                    A; Reference number: Z16420
A; Accession: T08462
                                                                                                                                                                                                                       R:Quetier, F.; Purnelle, B.; submitted to the Protein Sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Keywords: oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein A; Residues: 1-105 <WAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: A44639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               catalase (EC 1.11.1.6) - Streptomyces coelicolor (fragments) C;Species: Streptomyces coelicolor C;Date: 07-Oct-1994 #sequence_revision 07-Oct-1994 #text_cha. C;Accession: A44639 R;Walker, G. submitted to the Protein Sequence Database, September 1994 A;Reference number: A44639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C:Keywords: chromoprotein; heme; iron; metalloprotein; oxidoreductase F:54,93,127/Active site: His, Ser, Asn #status predicted F:337/Binding site: heme iron (Tyr) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Streptomyces violaceus
C;Date: 10-Dec-1993 #sequence_revision 26-May-1995 #text_change 04-Mar-2000
C;Accession: S37055
R;Facey, S.; van Pee, K.H.; Vining, L.C.
submitted to the EMBL_Data_Library, August 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Start codon: GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A:Cross-references: EMBL:X74791; NID:g397888; PIDN:CAA52796.1; PID:g581780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-483 <FAC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: S37055
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Reference number: S37055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Superfamily: catalase
                                                                              ATSP: F2206.250
                                                                                                                                                                                                                                                                                                                                                                                                          7 PLTTVAGAPVPDN 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 PLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                               PLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLTTEAGAPVADN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    catalase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                         EMBL:AL050300; GSPDB:GN00061; A:ce: cultivar Columbia; BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                         Sequence
     51.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        53.1%;
                                                                                                                                                                                                                       Boutry, M.; Go
uence Database,
   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42; DB
Pred. No. 3.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-Oct-1994 #text_change
 NO.
                                                                                                                                                                                                                   Goffeau, A.;
se, May 1999
DB
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
12;
                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ņ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>ب</u>
                                                                                                           ATSP: F2206.250
ne F2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
                   Length 321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 483
                                                                                                                                                                                                                                   Salanoubat, M.; Mewes, H.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-Oct-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

Ma

```
hypothetical protein T25B15.140 - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 04-Feb-2000 #sequence_revision 04-Feb-2000 #text_change 04-Feb-2000 C;Accession: T46107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
T50779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Alcaraz, J.P.; Clabault, G.; Cottet, A.; M
submitted to the Protein Sequence Database,
A;Reference number: 233021
A;Accession: T46107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       copper chaperone homolog CCH [imported] - rice
C;Species: Oryza sativa (rice)
C;Date: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 3
A; Introns: 418/1
             C;Species: Bordetella pertussis
C;Date: 27-Apr-1996 #sequence_revision 13-Mar-1997 #text_change 04-Mar-2000
C;Accession: S60757
R;DeShazer, D; Wood, G,E.; Friedman, R.L.
Mol. Microbiol. 14, 123-130, 1994
Mol. Microbiol. 14, 123-130, 1994
A;Fitle: Molecular characterization of catalase from Bordetella pertussis: identification A;Reference number: S60757; MUID:95131725; PMID:7830550
A;Accession: S60757
                                                                                                                                                                               RESULT 14
S60757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             plant Physiol. 117, 1227-1234, 1998
A; Title: Identification of a functional homolog of the yeast
A; Reference number: Z24450; MUID:9701579; PMID:9701579
A; Accession: T50779
                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Himelblau, E.; Mira, H.; Lin, S.J.; Culotta, V.C.; Penarrubia, L.; plant Physiol. 117, 1227-1234, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Accession: T50779
                                                                                                                                                                                                                                                          В
                                                                                                                                                                catalase (EC 1.11.1.6)
A;Status: preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Molecule type: DNA
Residues: 1-436 <ALC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pross-references: EMBL:AL132972
Pross-references: Cultivar Columbia; BAC clone T25B15
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                     Cross-references: EMBL:AF198626; PIDN:AAF15285.1
                                                                                                                                                                                                                                                                                                                                                                                                                           Molecule type: mRNA
kesidues: 1-132 <HIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291 EEKTPVEKKTGVPVVKKA 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        395 EEKTPVEKKTGVPVVKKA 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 50.0%; ses 9; Conservation
                                                                                                                                                                                                                                                                                                                                  Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T25B15.140
                                                                                                                                                                                                                                                                                               2 EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                              EAAPPTTTAAEAPAIAAA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                      Conservative
   nucleic acid
                                                                                                                                                                    Bordetella pertussis
                                                                                                                                                                                                                                                                                                                                                       50.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G.; Cottet, A.; Mache, R.; Mewes, equence Database, January 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1:
                                                                                                                                                                                                                                                                                                                                                       Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ore 42; DB
ed. No. 16;
Mismatches
   sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                          DB 2; Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    æ
                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         copper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lemcke,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           homeostasis gene AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
         not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Amasino,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                κ
. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mayer, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                      Search completed: March 14, 2003, 09:12:52
```

Job time : 21 secs

```
A:Gene: catA
C;Superfamily: catalase
C;Keywords: chromoprotein; heme; iron; metalloprotein; oxidoreductase
C;Keywords: chromoprotein; heme; iron; metalloprotein; oxidoreductase
F;57,96,130/Active site: His, Ser, Asn #status predicted
F;340/Binding site: heme iron (Tyr) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 1-482 <DES>
A;Residues: 1-482 <DES>
A;Cross-references: EMBL:U07800; NID:g494943; PIDN:AAA18481.1; PID:g494944
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, March 1994
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein F56F12.1 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
T31478
                                                                                                                                                                                                                                                                                                   R;Ainscough, R. Submitted to the EMBL Data Library, October 1999 A;Reference number: Z21039 A;Accession: T31478 A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                    C; Accession:
Вþ
                                Qy
                                                                                                                                                    A; Introns: 16/2; 50/1
                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 1-171 <WIL>
A;Cross-references: EMBL:282273; PIDN:CAB54978.1; GSPDB:GN00022; CESP:F56F12.1
A;Experimental source: clone F56F12
                                                                                                                                                                      A; Map position:
                                                                                                                                                                                         A; Gene: CESP: F56F12.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                         Best Lo
                                                                                                                                                                                                           Genetics:
                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
nes 9; Conserv
  73 TPTTTTAAAPIAAVA
                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 LTTAAGAPVADN 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 LTTAAXAPVVXN 18
                                    5 TPLTTAAXAPVVXNA 19
                                                                         8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                      T31478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50.6%;
75.0%;
                                                                                             49.4%;
    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41;
                                                                                             Score 40; DB Pred No. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
27;
                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω,
                                                                                 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 482;
                                                                                                                    Length 171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                     0;
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       otal number of hits satisfying chosen parameters:
               Pred. No. 1s the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and 1s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
               36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length:
seq length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-359-426C-2
81
1 XEEKTPLTTAAXAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 March 14, 2003, 09:07:13; Search time 10 Seconds (without alignments) 78.805 Million cell updates/sec
            SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XEEKTPLTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000000000
            CATA_PSEPU
EXPANDA
YMA_CAEE
YMA_CAEE
Y109_YEAST
Y109_YEAST
Y109_YEAST
Y109_YEAST
Y109_YEAST
LCYB_CAPAN
LCYB_LYCES
LCYB_TOBAC
PSD3_ANOST
DHAY_YEAST
YAJE_SCHPO
MUC1_XEANLA
FTSK_CAMPA
HTSK_CAMPA
GCST_FLANN
ICEN_XANCT
POLC_DEN3
CAV1_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATA_PSEAE
CATA_PROMI
RL7_STATI
RL7_STATI
RCA_STRVL
CATA_BORPE
ACM1_DRORPE
ACM1_DRORPE
ACM1_PSESP
YB64_YEAST
YNUC_INBLE
GYRB_WYXXA
GBP_PSESE
PLD_CORPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
     052369

P433669

P480659

P480659

P480659

P18569

P18569

P18569

P18569

P18569

P18569

P18569

P38314

P383314

P38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
p mus musculu
tubrio fisc
capsicum an
lycopersicu
nicotiana t
nico
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 pseudomonas
1 proteus mir
2 streptomyce
9 streptomyce
2 bordetella
5 drosophila
7 agaricus bi
                                                                                                                                                                                                                                                                                                                                                                                              treponema p
caenorhabdi
saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    myxococcus
pseudaletia
corynebacte
pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 saccharomyc
influenza b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pseudomonas
```

45	44	4	4	4.	40	. (L	ά	3 /	u J	) (a	34
36	ω 6	. u	. u	, u	u o	, w	, u	, (	, 4	, 4	ω 0 0
44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4
2332	2332	1128	626	583	567	553	501	340	322	214	158
1	Н	$\vdash$	ب	بــر	ب	ب	۳	i	-ر	· <b>-</b>	ب.
POLG_FMDVO	POLG_FMDVA	BEM3_YEAST	GPBA_HUMAN	AS15_MOUSE	ODP2_HAEIN	SPAK_RAT	LCYB_ARATH	CWFH_SCHPO	ANT_BPP1	DAMX_SERMA	HUNB_DROMM
P03305	P03308	P32873	P07359	Q8vhs6	P45118	088506	Q38933	094620	P19655	P45459	046248
f genome po		-			haemophilus		arabidopsi			serratia m	drosophila

## ALIGNMENTS

D D D C C C C C C C C C C C C C C C C C	R R T T T A A R R C C C C C C C C C C C C C C C C	RESULT CATA_P ID CO AC O AC O AC O DT 3.1 DT 1.1 DE C.1 GN K.
SEQUENCE FROM N.A.  STRAIN-ARCC 15692 / PAO1:  MEDLINE=20437337; PubMed=10984043;  Stover C.K., Pham XQ.T., Erwin A.L., Mizoguchi S.D., Warrener P., Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M., Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y., Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M., Smith K.A., Spencer D.H., Wong G.KS., Wu Z., Paulsen I.T., Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.;  "Complete genome sequence of Pseudomonas aeruginosa PAO1, an opportunistic pathogen.";  Nature 406:959-964(2000).  -1- FUNCTION: DECOMPOSES HYDROGEN PEROXIDE IN WATER AND OXYGEN; SERVES TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN PEROXIDE.  -1- FUNCTION: DECOMPOSES HYDROGEN PEROXIDE IN WATER AND OXYGEN; SERVES TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN PEROXIDE.  -1- FUNCTION: DECOMPOSES HYDROGEN PEROXIDE AND BFR-BOUND IRON.  -1- SUBUNIT: HETEROMULTIMER. POSSIBLY AN ALPHA(2)BETA-HETEROTRIMER WHERE THE ALPHA SUBUNIT IS A 56 KDB PROTEIN AND THE BETA SUBUNIT A 45 KDB PROTEIN.  -1- SIMILARITY: BELONGS TO THE CATALASE FAMILY.  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation on its mother of the Swiss Institute of Bioinformatics are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license agreement (See http://www.isb-sib.ch/announce/or send an email to license agreement (See http://www.isb-sib.ch/announce/or send an email to license sets-sib.ch).	10368148; Lotz M.G., Nanayakk Lotz M.G., Monaco J asil M.L., Monaco J ates catalase A (Karana atexide in Pseudomon 42(1999).	, r

```
CATA_PROWI
ID CATA_P
AC P43321
AC P43321
DT 01-NOV
DT 01-NOV
DT 01-NOV
DT 01-NOV
DE CATALA
GN FOTCE
OC PROTEC
OC PROTEC
OC STRAIN
RN HEDLIN
RC STRAIN
RA GAGNOR
RT "Compl
RT "Compl
RT active
RT active
RT active
RT active
RT 2-Pro
RN [1]
RP X-RAY
RC STRAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DR DR DR DR DR DR CW FT FT SQ
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                        PDB; 2CAE; 08-DEC-96.
PDB; 2CAF; 07-DEC-96.
PDB; 2CAG; 07-DEC-96.
PDB; 2CAH; 11-JAN-97.
InterPro; IPR002226; Catalase.
Pfam; PF00199; catalase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACT_SITE
BINDING
                                                                                                                                                                                                  Buzy A., Bracchi V., Sterjiades R., Chroboczek J., Thibault P., Gagnon J., Jouve H.-M., Hudry-Clergeon G.; "Complete amino acid sequence of Proteus mirabilis PR catalase. Occurrence of a methionine sulfone in the close proximity of the active site.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
Catalase (EC 1.11.1.6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom; PD000510; Catalase; 1.
PROSITE; PS00437; CATALASE_1; 1.
PROSITE; PS00438; CATALASE_2; 1.
                                                                                                                                                                                                                                                                               MEDLINE=95311317; PubMed=7791219;
Gouet P., Jouve H. M., Dideberg O.;
"Crystal structure of Proteus mirabilis
                                                                                                                                                                                                                                                                                                                          STRAIN=PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P42321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATA_PROMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oxidoreductase; Peroxidase; Iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00067; CATALASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00199; catalase;
                      ProDom; PD000510; Catalase; 1. PROSITE; PS00437; CATALASE_1; 1. PROSITE; PS00438; CATALASE_2; 1.
                                                PRINTS; PR00067; CATALASE. ProDom; PD000510; Catalase
                                                                                                                                                                               + +
                                                                                                                                                                                                                                                                      bound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proteus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Proteus mirabilis.
            Oxidoreductase; Peroxidase; Iron;
                                                                                                                                                    -! - SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE, AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002226; Catalase
                                                                                                                                                                                                                                                                                                                                     (-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95305957; PubMed=7786407;
                                                                                                                                                                                                                                                                                                                                                             Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                               SUBUNIT: HOMOTETRAMER.
SUBCELLULAR LOCATION: Cytoplasmic
MASS SPECTROMETRY: MW-55643; MW_EI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEKTRLTTAAGAPVVDN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEKTPLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                     NADPH.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteome. 55 128 1338 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                             Chem. 14:59-72(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128
1338
135589 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77.8%;
82.4%;
                                                                                                                                                    TO THE CATALASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 63;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILARITY.
BY SIMILARITY.
PROXIMAL HEME LIGAND (BY SIMILARITY).
84E5ABA647CAB414 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FROM N.A.
                                                                                                                                                                 MW_ERR-5; METHOD-Electrospray
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Heme; Hydrogen
          Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
          Hydrogen
                                                                                                                                                                                                                                                                                   PR catalase with and without
                                                                                                                                                    FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .0026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΑĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 482
          peroxide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peroxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                   PEROXIDE
                                                                                                                                                                                                                                              OXYGEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT 3
RLT_STRAT
ID RLT_S
AC P2934
AC P2934
AC P2934
DT 01-DE
DT 01-DE
DT 01-DE
DT 01-DE
CO Bacte
OC Actuit
RN [1]
RP SEQUI
RA PAITE
RT "Clor
RT equi
RT "Clor
RT equi
RT Gene
CC -!--
CC This
CC This
CC The
CC This
CC The
CC This
CC The
CC This
CC The
CC The
CC The
CC This
C
RESULT 4
BCA_STRVL
ID BCA_S
AC P3356
DT 01-FE
DT 01-FE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SO
FT
TH
                                                                                                                                                                      В
                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RL7_STRAT
P29342;
01-DEC-1992
01-DEC-1992
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
ACT_SITE
ACT_SITE
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Cloning and sequence of a gene encoding the equivalent of Streptomyces antibioticus."; gene 118:127-129(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptomyces antibioticus. Bacteria; Actinobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Actinomycetales; Streptomycineae; Streptomycetaceae; NCBI_TaxID=1890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50S ribosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000206; Ribosomal_L12.
Pfam; PF00542; Ribosomal_L12; 1.
ProDom; PD001326; Ribosomal_L12; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE=92380478; PubMed=1511874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M89911; AAA26811.1; -. PIR; JC1273; JC1273.
                                                                                                                                                                                                                                                                                                                                                          Ribosomal
                                                                                                                                                                                                                                                                                                                                                                                    TIGRFAMS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P02392;
                                                                                                                                                                      28
                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: SEEMS TO BE THE BINDING SITE FOR INVOLVED IN PROTEIN SYNTHESIS AND APPEARS ACCURATE TRANSLATION (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: BELONGS TO THE L12P FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EKKKLTTAAGAPVVDN 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKTPLTTAAXAPVVXN 18
                                                                                                                                                                                                           EEKTPLTTAAXAPVV 16
                                                                                                                                                                      EEKFDVTAAAAAPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                        protein.
128 AA;
                                                                                                                                                                                                                                                                                                                                                                                  TIGR00855; L12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 24,
(Rel. 24,
(Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53
54
127
337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rel. 24, Last sequence up Rel. 40, Last annotation protein L7/Ll2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1CTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53
54
127
337
55614
                                                                                                                                                                                                                                                                                                                                        13272 MW;
                                                                                                                                                                    42
                                                                                                                                                                                                                                                                           55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65.4%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Actinobacteria (class); Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                         Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 53; DB 1 Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METHIONINE SULFONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADC25F3CB41F5C50
                                                                                                                                                                                                                                                                                                                                          F5C3EE4F45D606E8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEME LIGAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rmatics and the I
There are no rest
ng as its content
                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OF RIBOSOMAL PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mendez
L7/L12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R SEVERAL OF THE TO BE ESSENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                                                                                                                                               Length 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 484
                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C., Salas
Pribosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                         0
```

BCA\_STRVL P33569; 01-FEB-1994 01-FEB-1994

(Rel.

28, Created) 28, Last seq

sequence

STANDARD;

483

AΑ

•

```
CATA_BORPE
ID CATA_BB
AC P48062
DT 01-FEB
DT 01-FEB
DT 30-MAY
DE CATALB
CA KATA.
OS BORDET
OC BACTER
OC BACTER
OC BACTER
OC NCBIT
RN [1]
RP SEQUEN
RC STRAIN
RA DESHBIT
CC -1- TO
CC -1- CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Facey S. Gross F. Vining L.C., Yang K., van Pee K.-H.;
"Cloning, sequencing and disruption of a bromoperoxidase-catalase
gene in Streptomyces venezuelae: evidence that it is not required
chlorination in chloramphenicol biosynthesis.";
Microbiology 142:657-665(1996).
-I- CATALYTIC ACTIVITY: 2 H(2)O(2) = O(2) + 2 H(2)O.
-I- SIMILARITY: BELONGS TO THE CATALASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACT_SITE
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptomyces violaceus (Streptomyces venezuelae).
Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
STRAIN-BP504;
Deshazer D., Wood G.E., Friedman R.L.;
Deshazer D., Wood G.E., Erledman R.L.;
Submitted (MAR-1994) to the EMBL/GenBank/DDBJ databases.
-I- FUNCTION: DECOMPOSES HYDROGEN PEROXIDE IN WATER AND
TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN
-I- CATALYTIC ACTIVITY: 2 H(2)0(2) = 0(2) + 2 H(2)0.
-I- COFACTOR: HEME GROUP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oxidoreductase; Peroxidase; ACT_SITE 54 54 54 ACT_SITE 127 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bromoperoxidase-catalase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996 (Rel.
                                                                                                                                                                                                           01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence up
30-MAY-2000 (Rel. 39, Last annotation
Catalase (EC 1.11.1.6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PRO0067; CATALASE.
PRODOM; CATALASE. 1.
PROSITE; PS00437; CATALASE_1; 1.
PROSITE; PS00438; CATALASE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X74791; CAA52796.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-97022081;
                                                                                                                                   Bordetella.
NCBI_TaxID=520;
                                                                                                                                                                                                                                                                         CATA_BORPE
P48062;
                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                   Bacteria;
                                                                                                                                                                                 Bordetella pertussis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nterPro;
                                                                                                                                                                                                                                                                                                                                                                Ç
                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S37055; S37055.
                                                                                                                                                                                                                                                                                                                                                                                             PLTTAAXAPVVXN
                                                                                                                                                                                                                                                                                                                                                                PLTTEAGAPVADN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pro; IPR002226; Catalase. PF00199; catalase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P42321;
                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
9; Conserv
                                                                                                                                                                   Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   337
483 /
                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / ISP5230;
PubMed=8868441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54 B
127 B
337 P
54087 MW;
                                                                                                                                                                                                                                                                                                                                                                                             18
                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                       53.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last annotation update) ase (EC 1.11.1.-).
                                                                                                                                                                    beta subdivision; Alcaligenaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Iron;
                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROXIMAL HEME LIGAND (BY SIMILARITY).
B58CF8230B8A2F55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY.
                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Heme;
                                                                                                                                                                                                                                                                                        482
                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hydrogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peroxide
                                                  OXYGEN;
                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                SERVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
RESULT 6
ACM1_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SO THE WAY TO THE TENT OF THE TEN
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACM1_DROME
P16395;
01-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002226; Catalase. Pfam; PF00199; catalase; 1. PRINTS; PR00067; CATALASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use by non-profit institutions as long as its content use of the long through t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oxidoreductase; Peroxidase; ACT_SITE 57 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProDom; PD000510; Catalase; 1.
PROSITE; PS00437; CATALASE_1; 1.
PROSITE; PS00438; CATALASE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U07800; AAA18481.1; -. HSSP; P42321; 2CAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----
                                                                                                                                Onal T., Fitzgerald M.G., Arakawa S., Gocayne J.D., Urquhart D.A.,
Hall L.M., Fraser C.M., McCombie W.R., Venter J.C.;
"Cloning, sequence analysis and chromosome localization of a
Drosophila muscarinic acetylcholine receptor.";
FEBS Lett. 255:219-225(1989).
-i- FUNCTION: "THE MUSCARINIC ACETYLCHOLINE RECEPTOR MEDIATES VARIOUS
-i- FUNCTION: THE MUSCARINIC ACETYLCHOLINE RECEPTOR MEDIATES VARIOUS
-IRRONORN OF PHOSPHOINOSITIDES & MODULATION OF POTASSIUM CHANNELS
THROUGH THE ACTION OF G PROTEINS. PRIMARY TRANSDUCING EFFECT IS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila. NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-1990 (Rel. 15, Created)
01-AUG-1990 (Rel. 15, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Muscarinic acetylcholine receptor DM1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic and cDNA clones acetylcholine receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shapiro R.A., Wakimoto B.T., Subers E.M., Nathanson "Characterization and functional expression in mamma genomic and cDNA clones encoding a Drosophila muscar acetylcholine receptor.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. STRAIN-Oregon-R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACRC OR MACR-60C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACT_SITE
                         <del>-</del> <del>-</del> <del>-</del> <del>-</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=90005981; PubMed=2507354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=90046926; PubMed=2510174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: HOMODIMER (BY SIMILARITY). SIMILARITY: BELONGS TO THE CATALASE FAMILY.
                         THROUGH THE ACTION OF PI TURNOVER.
SUBCELLULAR LOCATION:
SIMILARITY: BELONGS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LTTAAGAPVADN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LTTAAXAPVVXN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Natl. Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
130
340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U.S.A.
                                 TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW.
                                                                     Integral membrane protein
                                 FAMILY 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROXIMAL HEME LIGAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  86:9039-9043(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7CB73E08975C219F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Heme; Hydrogen peroxide
                                 OF G-PROTEIN COUPLED RECEPTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        n mammalian
muscarinic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

modified and this statement

non-profit

Bioinformatics Institute. The profit institutions as long this statement is not removed.

There are no restrictions ong as its content is in

EMBL outstation a collaboration

Usage

γď and

for

in no way 9

This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN

use the

European

```
H2B_AGABI
                                                                                               RESULT
                                                                                                                        B
                                                                                                                                       QΥ
                                                                                                                                                                                                                            Query Match
Best Local S
Matches S
                                                                   H2B_AGABI
P78567;
                           HTBA
                                                                                                                                                                                                  CONFLICT
CONFLICT
                                                                                                                                                                                                                            CONFLICT CONFLICT
                                                                                                                                                                                                                                                    CONFLICT
        Agaricus bisporus
Eukaryota; Fungi;
                                          01-NOV-1997
30-MAY-2000
                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
                                                            01-NOV-1997
Agaricales;
                                  Histone H2B
                                                                                                                                                                                           SEQUENCE
                                                                                                                        538
                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00237; GECRRHODOPSN.

PROSITE; PS00237; G_PROTEIN_RECEP_F1_1; 1.

PROSITE; PS50262; G_PROTEIN_RECEP_F1_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M27495; AAA85449.1;
EMBL; M23412; AAA28676.1;
PIR; A36191; A36191.
PIR; S05661; S05661.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send
                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00001; 7tm_1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000276; GPCR_Rhodpsn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FlyBase; FBgn0000037; mAcR-60C
                                                                                                                       EDGPTTTAAAAPLASAA 554
                                                                                                                                       EKTPLTTAAXAPVVXNA 19
                                                                                                                                                         Similarity 9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   s requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
                                          (Rel.
(Rel.
Agaricaceae;
                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                694
                                                                                                                                                                                                                                                                                                                                       163
185
209
635
657
                                                                                                                                                                                                                                                                                                                                                                                          27
50
61
82
101
121
141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     membrane; Ionic
                                                                                                                                                                                          AA;
                                                                            STANDARD;
     Basidiomycota; Hymenomycetes;
                                        35, Created)35, Last sequence update)39, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Multigene
                (Common mushroom)
                                                                                                                                                                                                  75
119
136
147
250
250
381
451
606
614
688
                                                                                                                                                                                                                                                                                                                                       49.48;
                                                                                                                                                                                          78237
Agaricus
                                                                                                                                                                                          MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                              N_RECEP_F1_2; 1.
ic channel; Glycoprotein; Transmembrane; family; G-protein coupled receptor.
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                        A -> AA (IN REF 2).
P -> G (IN REF 2).
MISSING (IN REF 2).
G -> A (IN REF 2).
T -> A (IN REF 2).
C -> VG (IN REF 2).
P -> AR (IN REF 2).
                                                                                                                                                                                                                                                                                                                                                                                                                           1 (POTENTIAL).
CYTOPLASMIC (PC
                                                                                                                                                                Score 40;
Pred. No.
                                                                                                                                                                                               VLI -> CXS (IN REF. 1).
S -> C (IN REF. 2).
EGMVRGVYN -> DFYAASTIR
                                                                                                                                                                                                                                                                                    N-LINKED
N-LINKED
T -> A (I
N -> S (I
G -> R (I
                                                                                                                                                                                                                                                                                                                                                                          EXTRACELLULAR (POTENTIAL)
5 (POTENTTAL)
                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC
6 (POTENTIAL
                                                                                                                                                                                                                                                                                                                                              6 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                         4 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                         EXTRACELLULAR (POTENTIAL)
3 (POTENTIAL).
                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                         FB35417CB2202A61 CRC64;
                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                   NKED (GLCNAC. . .) (POTENTIAL).
NKED (GLCNAC. . .) (POTENTIAL).
A (IN REF. 2).
S (IN REF. 2).
R (IN REF. 2).
                                                                            143 AA
                                        update)
                                                                                                                                                             DB
31;
                                                                                                                                                                                                                                                                                                                             (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                DFYAASTIR (IN REF.
                                                                                                                                                                        1;
                                                                                                                                                                      Length 722
      Homobasidiomycetes
                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                                       0;
                                                                                                                                                       Gaps
                                                                                                                                                       0
```

```
RESULT
DMPC_PS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
""+"hes 8; Conserv?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
  This SWISS-PROT
                         CRESOLS AND CATECHOL. PHENOL METABOLISM.
-!- SIMILARITY: BELONGS TO THE ALDEHYDE DEHYDROGENASES FAMILY
                                                  "NUCLectide sequences of the meta-cleavage pathway enzymes 2-
hydroxymuconic semialdehyde dehydrogenase and 2-hydroxymuconic
semialdehyde hydrolase from Pseudomonas CF600.";
Biochim. Blophys. Acta 1049:227-230(1990).

-i- FUNCTION: 2-HYDROXYMUCONIC ACID SEMIALDEHYDE CAN BE CONVERTED
2-HYDROXYPENT-2,4-DIENOATE EITHER DIRECTLY BY THE ACTION OF
2-HYDROXYMUCONIC SEMIALDEHYDE HYDROLASE (HMSH) OR BY THE ACTIO
THREE SEQUENTIAL ENZYMES, THE FIRST OF WHICH IS HMSD.

-i- PATHWAY: META-CLEAVAGE PATHWAY FOR THE DEGRADATION OF PHENOLS,
                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=90304229; PubMed=2194577;
Mordlund I., Shingler V.;
                                                                                                                                                                                                                                                          Pseudomonas sp. (strain (Plasmid pVI150).
Bacteria; Proteobacteria.
                                                                                                                                                                                                                                                                                                      DMPC
                                                                                                                                                                                                                                                                                                                                                                                                  PSESP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SMO0427; H2B; 1.

PROSITE; PS00357; HISTONE_H2B; 1.

Chromosomal protein; Nucleosome consequence 143 AA; 15165 MW; 69
                                                                                                                                                                                                                                                                                                                               01-NOV-1990
15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                          P19059;
01-NOV-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00125; histone; 1.
PRINTS; PR00621; HISTONEH2B.
ProDom; PD000497; Histone_H2B;
                                                                                                                                                                                                                                                                                                                                                                                        DMPC_PSESP
                                                                                                                                                                                                                                              NCBI_TaxID=306;
                                                                                                                                                                                                                                                                                                                  2-hydroxymuconic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. Then use by non-profit institutions as long a modified and this statement is not removed. entities requires a license agreement (See )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - \frac{1}{2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      App1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000558; Histone_H2B.
InterPro; IPR004822; Histone_core.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X94188; CAA63898.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Isolation of expressed sequence tags of Agaricus bisporus and assignment to chromosomes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97111990; PubMed=8953726;
Sonnenberg A.S.M., de Groot P.W.J.,
Visser J., van Griensven L.J.L.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=5341;
                                                                                                                                                                                                                                                                                                                                                                                                                    α
                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 KTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H2A, H2B, H3, AND H4; WHICH WRAP APPROXIMATELY SUBCELLULAR LOCATION: Nuclear. SIMILARITY: BELONGS TO THE HISTONE H2B FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT: THE NUCLEOSOME IS AN H2A, H2B, H3, AND H4; WHICH WE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         KAPASTASKAPVKSDA 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Environ. Microbiol. 62:4542-4547(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                             (Rel.) (Rel.) (Rel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
  entry
                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                      (strain CF600).
                                                                                                                                                                                                                                                                                                               semialdehyde dehydrogenase (EC 1.2.1.-) (HMSD)
                                                                                                                                                                                                                                                                                                                             16, Created)16, Last sequence update)36, Last annotation update)
  s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48.1%;
 copyright.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 39;
                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e core; Nuclear protein; 69640102E31F4B56 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OCTAMER CONTAINING
 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schaap P.J.,
                                                                                                                                                                                                                                                                                                                                                                                     486 AA
is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
6;
produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Baars J.J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ING TWO M
through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULES OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                  ACTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           their
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in no way
                                                                                                               TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on
                                                                                  OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

Page

```
Y864_YEAST
Y864_YEAST
Y864_YEAST
ID Y864_Y
AC P38314
AC 01-OCT
DT SECULE
RC STRAII
RA R1sqei
RL Submil
RA Dubois
RA Scher
RL Submil
RA Dubois
RA Scher
RL Submil
CC -1-S
CC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; x52805; CAA36992.1; -...
PIR; S10772; S10772.
HSSP; P20000; 1AG8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE: PS00070; ALDEHYDE_DEHYDR_CYS; 1.

PROSITE: PS00687; ALDEHYDE_DEHYDR_GLU; 1.

PROSITE: PS00687; ALDEHYDE_DEHYDR_GLU; 1.

Aromatic hydrocarbons catabolism; Oxidoreductase; NAD; Plasmid. Aromatic hydrocarbons catabolism; Oxidoreductase; NAD; Plasmid. Aromatic hydrocarbons catabolism; Oxidoreductase; NAD; Plasmid. Aromatic hydrocarbons aromatic 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YB64_YEAST
P38314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002086; Aldehyde_dehydr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00171; aldedh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1994 (Rel. 30, Created)
01-OCT-1994 (Rel. 30, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
15-JUL-1998 (Rel. 36, Last annotation update)
Hypothetical 57.2 kDa protein in MET8-HPC2 intergenic region
YBR214W OR YBR1501.
                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Swiss Institute. There are no restrictions on its the by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saccharomyces Cerevisiae (Baker's yeast).
Eukarvota: Fungl: Ascomycota: Saccharomycotina: Saccharomycetes:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Saccharomycetales;
NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Fungi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 114-527 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-S288c;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dubois E., el Bakkoury M., G
Scherens B., Vierendeels F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-S288C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
   Hypothetical protein; I
DOMAIN 196 251
DOMAIN 283 335
SEQUENCE 527 AA; 571
                                                                                                                                                                                                                                                                                            EMBL; Z36083; CAA85178.1; -. PIR; S46088; S46088.
                                                                                                                                                                                    Pfam; PF00571
                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |:|||||| |: |
|EETPLTTALLGEVMQAA 197
                                                                                                                                                                                                                               S0000418; SDS24.
rPro; IPR000644; CBS_domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          similarity
9; Conserv
                                                                                                    O; 1PROVVO
PF00571; CBS; 4.
SM00116; CBS; 2.
SM00116; CBS; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.1%;
nilarity 52.9%;
Conservative
283
527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ascomycota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomycetaceae;
                   335
57187 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Glansdorff N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 39; DB pred. No. 30;
                                                         CBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                  CBS domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                          DC2741550A69C154 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Messenguy F., Pierard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VNUC_INBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
RESULT 11
GYRB M
ID 15-DEC
DT 15-DEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VNUC_INBLE P04665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

MEDLINE-84174071; PubMed-6324462;

Briedis D.J., Tobin M.;

Briedis D.J., Tobin M.;

"Influenza B virus genome: complete nucleotide sequence o influenza B/lee/40 virus genome RNA segment 5 encoding the influenza B/lee/40 virus genome RNA segment 5 encoding the nucleoprotein and comparison with the B/Singapore/222/79 nucleoprotein.";

Virology 133:448-455(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-AUG-1987 (Rel.
13-AUG-1987 (Rel.
01-MAY-1992 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Suiss Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Influenza B virus (strain B/Lee/40).
Viruses; ssrNA negative-strand viruses; Orthomyxoviridae;
Influenzavirus B.
NCBI_TaxID=11535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nucleoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleoprotein.
SEQUENCE 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; K01395; AAA43689.1; ... InterPro; IPR002141; Flu_NP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00506; Flu_NP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52 EESTPPTATAAAP 64
                                                                                                                                                                                                                                                                                     GYRB_MYXXA
                                                                                       Myxococcus xanthus.
Bacteria; Proteobacteria; delta
Myxococcales; Cystobacterineae;
                                                                                                                                                                                         IS-DEC-1998 (Rel. 37, Created)
IS-DEC-1998 (Rel. 37, Last Sequence update)
IS-JUN-2002 (Rel. 41, Last annotation update)
DNA gyrase subunit B (EC 5.99.1.3).
                                                                                                                                                                                    DNA gyrase
  SEQUENCE FROM N.A.
STRAIN=ER-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 EEKTPLTTAAXAP
                                                                   NCBI_TaxID=34;
                                                                                                                                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                             EELTPGTSGATRPIIKPA 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      560 AA; 61770 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05,
22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74C4FEAF9E75A695 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                      subdivision; Myxobacteria;
Myxococcaceae; Myxococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 560 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
33;
                                                                                                                                                                                                                                                                                                                      815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
35;
                                                                                                                                                                                                                                                                                                                      ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
RESULT 12
GBP_PB_P
AC 02791
DT 15-JU
RAC GEWAT
OS Pseudo
OC Ditry
RN (1)
RP SEQUE
RX MEDLI
RA Hayak
RT MEDLI
RA TBS
RN [2]
RP SEQUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPRO03594, ATPbind_ATPase.
InterPro; IPRO02288; DNA_gyraseB_C.
InterPro; IPRO01241; DNA_topoisoII.
InterPro; IPRO01241; DNA_topoisoII.
InterPro; IPRO02936; DNAprim_toprim.
Pfam; PF00204; DNA_gyraseB_C; 1.
Pfam; PF00988; DNA_gyraseB_C; 1.
Pfam; PF01751; Toprim; 1.
Pfam; PF01751; Toprim; 1.
Pfam; PF02518; HATPase_C; 1.
Pfam; PP000616; DNA_topoisoII; 1.
ProDom; PD109633; DNA_gyraseB_C; 1.
SMART; SM00387; HATPase_C; 1.
SMART; SM00387; HATPase_C; 1.
TIGRPAMS; TIGRO159; GyrB; 1.
PTOSITE; PS00177; TOPOISOMERRSE_II; 1.
PROSITE; PS00177; TOPOISOMERRSE_II; 1.
PROSITE; PS00177; TOPOISOMERRSE_II; 1.
SEQUENCE 815 A; 89036 MW; 3862685FBB
                                                                                                                                                                                                                        GBB_PSESE STANDARD; PRT; 143 AA.
Q27913;
15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Growth-blocking peptide precursor (GBP).
Pseudaletia separata (Armyworm).
BUKATYOTA; Metazoa; Arthropoda; Mandibulata; Pancrustacea;
Ditrysla; Noctuoidea; Noctuidae; Hadeninae; Pseudaletia.
NGBL_TaxID=7105;
                                                             Hayakawa Y., Ohnishi A., Yamanaka A., Iz "Molecular cloning and characterization peptide, growth-blocking peptide."; FEBS Lett. 376:185-189(1995).
                         SEQUENCE FROM N.A.
                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-96105377; PubMed=7498538;
MEDLANE-96105377; PubMed=7498538;
Hayakawa Y., Ohnishi A., Yamanaka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Paltan Y., Boulton N., Ron E.Z., Rosenberg E., Orr E.;
"Molecular analysis of the DNA gyrb gene from Myxococcus xanthus.";
Microbiology 144:1647-1647(1998).
-i- FUNCTION: DNA GYRASE NEGATIVELY SUPERCOILS CLOSED CIRCULAR DOUBLE-
STRANDED DNA IN AN ATP-DEPENDENT MANNER AND ALSO CATALYZES THE
INTERCONVERSION OF OTHER TOPOLOGICAL ISOMERS OF DOUBLE-STRANDED
DNA RINGS, INCLUDING CATEMANES AND RNOTTED RINGS.
-i- CATALYTIC ACTIVITY: ATP-dependent breakage, passage and rejoining
of double-stranded DNA.
-i- SUBBUNIT: MADE UP OF TWO CHAINS. THE A CHAIN IS RESPONSIBLE FOR DNA
BREAKAGE AND REJOINING; THE B CHAIN CATALYZES ATP HYDROLYSIS. THE
ENZYME FORMS AN ASB2 TETRAMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AJ000543; CAA04176.1; -. HSSP; P06982; 1AJ6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=98304088; PubMed=9639935; Paitan Y., Boulton N., Ron E.Z..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 EKTPLTTAAXAP 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EKTPATGSAVAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: BELONGS TO THE TYPE II TOPOISOMERASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the Expression of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3862685FBB805B32 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                              Izumi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
52;
                                                                                                         of cDNA
                                                                                                                              s;
                                                                                                Tomino S.;
for insect biogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                    Glossata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                                                                                                                                                           Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
```

δÃ

```
RESULT 13
PLD_CORPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                       P20626, Q59314;

01-FEB-1991 (Rel. 17, Create

01-FEB-1991 (Rel. 17, Last s

01-NOV-1997 (Rel. 35, Last s

Phospholipase D precursor ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=98316655, PubMeu->-.
Hayakawa Y., Noguchi H.;
"Growth-blocking peptide expressed in the informal and functional chracterization.";
This cloning and functional chracterization.";
                                                            SEQUENCE FROM N.A., AND SEQUENCE OF 25-47.

MEDLINE-90170833; PubMed=2407718;
Hodgson A.L.M., Bird P., Nisbet I.T.;
"Cloning, nucleotide sequence, and expression the phospholipase D gene from Corynebacterium J. Bacteriol. 172:1256-1261(1990).
STRAIN-Biovar ovis
MEDLINE-90093451; p
               SEQUENCE FROM N.A. STRAIN-BIOVAR OVIS
                                                                                                                                                                                                                                        corynebacterium pseudotuberculosis.

Bacteria; Actinobacteria; Actinobacteria (class); Actinobacteridae;
Actinomycetales; Corynebacterineae; Corynebacteridae;
                                                                                                                                                                                                                          Corynebacterium.
                                                                                                                                                                                                        NCBI_TaxID=1719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; ABU1223,
PDB; 1BQF; 09-DEC-98.
InterPro; IPR003463; GBP_PSP.
InterPro; IPR003463; GBP_PSP; 1.....
                                                                                                                                                                                                                                                                                                                                                                                                               PLD_CORPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hemolymph;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; S80564; AAB35742.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aizawa T., Fujitani N., Hayakawa Y., Kawano K., Hikichi K., Nitta K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Hemolymph;
MEDLINE-99107831; PubMed-9890941;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83 DEVTPATTTTTAAPAVPNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptide.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Solution structure of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 EEKTP--LTTAAXAPVVXNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BIO1. Chem. 274:1887-1890(1999).
FUNCTION: BIOGENIC PEPTIDE THAT PREVENTS, IN LEPIDOPTERAN, THE ONSET OF METAMORPHOSIS FROM LARVA TO PUPA. THIS GROWTH-BLOCKING PEPTIDE HAS REPRESSIVE ACTIVITY AGAINST JURNILE HORMONE ESTERASE. SIMILARITY: BELONGS TO THE GBP / PSP1 / PARALYTIC PEPTIDE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1
23
121
127
143 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                      Corynebacterineae;
PubMed=2403529
           / Isolate Whetten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22
120
143
139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.98;
50.08;
                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
ursor (EC 3.1.4.4) (PLD) (Choline phosphatase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15256 MW;
                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     an insect growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GROWTH-BLOCKING PEPTIDE.
                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEBFB527956840EB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                    Corynebacteriaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38;
                                                                                                                                                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ohnishi A.,
                                                                                                                                                                                                                                                                                                                                                                                                     ĀΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   insect nervous
                                                                                in Escherichia coli of
pseudotuberculosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  growth-blocking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ohkubo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   system:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kumaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Υ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲.
```

```
RESULT 14
CATA_PSEPU
ID CATA_P
AC 059714
DT 30-MAY
DT 30-MAY
DT 30-MAY
DT 30-MAY
DT SEPU
CATALA
GN KATA 0
OS PSEUDO
OX NCBI_T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                059714;

059714;

30-MAY-2000 (Rel. 39, Last seque

30-MAY-2000 (Rel. 39, Last seque

30-MAY-2000 (Rel. 39, Last annot

Catalase (EC 1.11.1.6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                         Bacteria; Proteobacteria;
                                                                                         Pseudomonas putida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYGTOLASE; Lipid of SIGNAL 1 25 CHAIN 25 ACT_SITE 44 VARIANT 5 VARIANT 189 VARIANT 205 VARIANT 270 VAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
ACT_SITE
                                                                                                                                                                                                                                                                                                      CATA_PSEPU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentitles requires a license agreement (See http://www.isb-sib.or send an email to licenseelsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BLOVAR OVIS / ISOLATE Whetten 1;

MEDLINE-95020614; Pubmed-7934899;

MCNAmara P.J., Bradley G.A., Songer J.G.;

"Targeted mutagenesis of the phospholipase D gene results in decreased virulence of Corynebacterium pseudotuberculosis.";

MOI. MICROBIOI. 12:921-930(1994).

-i- FUNCTION: VIRULENCE FACTOR AFFECTING BACTERIAL DISSEMINATION SURVIVAL WITHIN THE HOST. HAS MAGNESIUM-DEPENDENT SPHINGOMYEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; L16587; AAA64910.1;
EMBL; L16586; AAA99867.1;
PIR; A35125; A35125.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-95255653; PubMed-7737503; McNamara P.J., Cuevas W.A., Songer "Toxic phospholipases D of Corunch Chomole and Arcanata and Arcanata home"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gene 156:113-118(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Songer J. "Cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                             18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MUTAGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Corynebacter1.um
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 PLTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Infect.
                                                                                                                                                                                                                                                                                                                                                                                                                                                PVGNAAAAPVVHN 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: TO OTHER CORYNEBACTERIUM PHOSPHOLIPASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND HEMOLYTIC ACTIVITY.

CATALYTIC ACTIVITY: A phosphatidylcholine + H(2)0 =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Libby S.J., Iandolo J.J., Cuevas W.A.; expression of the phospholipase D gene tum pseudotuberculosis in Escherichia con. 58:131-136(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۶
                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           degradation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24
307
44
6
8
189
205
270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33884 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W.A., Songer J.G.;
D of Corynebacterium pseudotuberculosis, C.
cterium haemolyticum: cloning and sequence
                                         gamma subdivision; pseudomonadaceae;
                                                                                                                                                                sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.

VV -> FA (IN BIOVAR EQUI / F -> L (IN BIOVAR EQUI / I: E -> G (IN BIOVAR EQUI / I: N -> D (IN BIOVAR EQUI / I: N -> M (IN BIOVAR EQUI / I: A -> P (IN BIOVAR E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    بر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 38; DB
Pred No. 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PHOSPHOLIPASE D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Magnesium; Virulence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D3B1334E6FC99875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                          479
                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dilpase D gene from Escherichia coli.";
                                                                                                                                                                                                                                                                                      ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 I / ISOLATE 155).
ISOLATE 155).
/ ISOLATE 155).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPHINGOMYELINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               choline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     commercia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
дb
                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                                                                                                                                                                         EFG1_TREPA STANDARD; PR 083748; 15-DEC-1998 (Rel. 37, Created) 15-DEC-1998 (Rel. 37, Last seque 16-OCT-2001 (Rel. 40, Last annot Elongation factor G 1 (EF-G 1). FUSA OR FUSA-2 OR TP0767.
                                       Eraser C.M., Norris S.J., Weinstock G.M., White O., Sutton G.G., Dodson R., Gwinn M., Hickey E.K., Clayton R., Ketchum K.A., Sodergren E., Hardham J.M., McLeod M.P., Salzberg S., Peterson J., Khalak H., Richardson D., Howell J.K., Chidambaram M., Utterback T., McDonald L., Artlach P., Bowman C., Cotton M.D., Fujli C., Garland S., Hatch B., Horst K., Roberts K., Sandusky M., Weidman J., Smith H.O.,
      spirochete.
Science 281
                  "Complete genome sequence
                                                                                                                                      SEQUENCE FROM N.A. STRAIN=Nichols;
                                                                                                                                                                                   Treponema pallidum.
Bacteria; Spirochaetales;
                                                                                                                                                                                                                                                                                                    TREPA
                                                                                                                            MEDLINE-98332770;
                                                                                                                                                                           NCBI_TaxID=160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prodom; PD000510; Catalase; 1.
PROSITE; PS00437; CATALASE_1; 1.
PROSITE; PS00438; CATALASE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oxidoreductase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR002226; Catalase, Pfam; PF00199; catalase; 1, PRINTS; PR00067; CATALASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U63511; AAB88219.1; -. HSSP; P42321; 2CAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- ENZYME REGULATION: ACTIVATED BY PEROXIDE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- CATALYTIC ACTIVITY: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene 199:219-224(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kim Y.C., Miller C.D., Anderson A.J., "Identification of adjacent genes encoding bacterioferritin from the plant-beneficial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=98019091;
Kim Y.C., Miller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             putida.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                     ū
                                                                                                                                                                                                                                                                                                                                                                      7 LTTAAXAPVVXN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN CATALTYIC ACTIVITY: 2 H(2)O(2) = O(2) + 2 H(2)O.
                                                                                                                                                                                                                                                                                                                                                   LTTASGAPVADN
281:375-388(1998)
                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                  479 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
336
                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peroxidase;
                                                                                                                         PubMed=9665876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             53
126
336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=9358059;
                                                                                                                                                                                                                                                                                                                                                                                                                                               53381 MW;
                                                                                                                                                                                                                                                                                                                                                                                                             46.98;
                                                                                                                                                                                                                       Last sequence up
Last annotation
(EF-G 1).
                           0f
                                                                                                                                                                                Spirochaetaceae; Treponema
                      Treponema pallidum,
                                                                                                                                                                                                                                                                                                                                                                                                 ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Iron; Heme;
                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 44;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                            Iron; Heme; Hydrogen perox
BY SIMILARITY.
BY SIMILARITY
BY SIMILARITY
BY FROXIMAL HEME LIGAND (BY
FROXIMAL HEME LIGAND (CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                      Score 38;
                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                   695
                                                                                                                                                                                                                                  update
                                                                                                                                                                                                                                                                                                                                                                                                                       DΒ
                                                                                                                                                                                                                                                                                   ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                      ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the major catalase and bacterium Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Usage
                                                                                                                                                                                                                                                                                                                                                                                             ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                     Length 479,
                   the syphilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peroxide
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEROXIDE.
                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                   s:,
                                                                                                                                                                                                                                                                                                                                                                                       0;
```

```
DR
DR
DR
DR
DR
DR
DR
DR
FT
FT
FT
SQ
                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                   δÃ
Search completed: March 14, 2003, 09:11:48
                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR004540; EF-G.
InterPro; IPR000640; EFG_C.
InterPro; IPR004161; EFTU_D.
InterPro; IPR000795; EF_GTbbind.
InterPro; IPR005225; Small_GTP.
Pfan; PF00009; GTP_EFTU; 1.
Pfam; PF00079; EFG_C; 1.
Pfam; PF003144; GTP_EFTU_D2; 1.
PRINTS; PR00315; ELONGATNECT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- FUNCTION: THIS PROTEIN PROMOTES THE GTP-DEPENDENT TRANSLOCATION OF THE NASCENT PROTEIN CHAIN FROM THE A-SITE TO THE P-SITE OF THE RIBOSOME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AE001248; AAC65735.1; -. HSSP; P13551; 2EFG. TIGR; TP0767; -. TIGR; -. TIGR; TP0767; -. TIGR; -. TIGR; TP0767; -. TIGR; -. T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PRO0315; ELONGATMECT.

PRIGREAMS; TIGR00231; small_GTP; 1.

TIGREAMS; TIGR00231; small_GTP; 1.

TIGREAMS; TIGR00484; EF-G; 1.

PROSITE; PS00301; EFACTOR_GTP; 1.

ELONGATION FACTOR; Protein biosynthesis; GTP-binding; ELONGATION FACTOR; Complete proteome.

Multigene family; Complete proteome.

Multigene family; Complete GTP (BY SIMILARITY).

NP_BIND 15 139 GTP (BY SIMILARITY).

NP_BIND 136 139 GTP (BY SIMILARITY).

NP_BIND 136 139 GTP (BY SIMILARITY).

NP_BIND 136 139 GTP (BY SIMILARITY).
                                                                                                                                                                             295 EEPVTLSTDADAPVV 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: Cytoplasmic. SIMILARITY: BELONGS TO THE GTP-BINDING ELONGATION FACTOR FAMILY. EF-G/EF-2 SUBFAMILY.
                                                                                                                                                                                                                                                                   2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                          h 46.9%; Score 38; DB 1; Length 695; Similarity 60.0%; Pred. No. 65; 9; Conservative 1; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                         Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                          Score
 SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
3: sp_fung1:*
4: sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-359-426C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               671580 segs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                         Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 XEEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                             110:
111:
111:
112:
113:
114:
115:
116:
                                                                                                                                                                                                                                                                                                                                                                                                                        Maximum Match 100%
Listing first 45 su
GenCore version 5.1.4\_p5\_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                    sp_human:*
sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                          sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                           sp_archea: *
                                                                                                                                                                                                                                                                                                                                                                                   sp_bacteria:*
                                                                                                                                                                                                                                                                                                                     sp_phage: *
                                                                                                                                                                                                                                                                                                                              sp_organelle: *
                                                                                                                                                                                                                                                                                         sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                          sp_plant:*
480
458
484
314
314
427
427
427
427
427
424
1240
211
436
487
132
417
                                                                                                                                                           99
 12
2
10
16
10
2
                                                                                                     16
2
                                                                           10
2
5 Q8XGW5
Q9A119
Q9A109
Q9A900
Q23188
P77924
Q Q9WH8
Q9RU2
Q9X6X8
Q9FT45
Q9FT45
Q9SE04
Q54272
Q8ZZXO
                                                                                                                     Q8ZGS4
Q76672
Q9RG14
                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                           summaries
                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           671580
                                                                        Q8zgs4 yersinia pe
Q76672 caenorhabdi
Q9rg14 actinobacil
Q8xgw5 salmonella
Q8xii9 escherichia
Q9aii9 escherichia
Q94aq0 arabidopsis
Q23188 arabidopsis
 Q9dwh8 rat cytomeg
Q9rnu2 streptococc
Q9x6x8 streptococc
Q9ft45 arabidopsis
Q9rJk9 streptomyce
Q9e04 oryza sativ
Q54272 streptomyce
Q8zzx0 pyrobaculum
                                                                                                                                                           Description
```

45	44	43	42	41	40	<b>3</b> 9	38	37	36	S S	34	ω ω	32	<u>3</u> 1	ა 0	29	28	27	26	25	24	23	22	21	20	19	18	17
38.5	39	39	39	39	39	39	39	39	39	39	39	39	w	٠	9	40	40	40	40	40	40	40	40	40	40	40	40	41
47.5	48.1	48.1	48.1	8	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1		48.8			49.4	49.4	49.4	49.4	9.	9	9	9	9	9		50.6
842	4900	1353	952	572	518	507	484	484	419	410	395	395	255	1793	405	1473	1360	846	788	594	498	477	394	258	252	212	171	1012
σ	G	ഗ	12	10	13	16	16	12	16	N	11	11	10	ഗ	10	ű	ر ت	13	თ	σ	15	16	16	16	17	Ŋ	ഗ	Çī
Q9VJН6	Q9N541	018182	Q99174	Q9LJG2	Q9PTY0	Q9A8Y1	Q9CPK5	Q9WAU2	Q8ZNG4	Q9FD09	Q8R3V5	Q91Z17	Q9LGM5	Q9W596	Q03462	Q9VHP9	002006	057577	Q9W180	Q9BLH5	Q79665	Q9RD97	Q9A4B0	Q8Y5M9	Q9Y984	Q9U4Y3	Q9U3E3	Q9V745
OSOPHILA		Object Caenorianut	-		Qyptyu cyprinus ca		Qycpkb pasteuralia			· co	Ograva muscuru	mus	Quigno oryza sativ	Q9w596 drosopnila		rosopnila	drosophil		Q9w180 drosopnila		U	1 7			, 43	ceracitis c	le3 caenorhabd	

## ALIGNMENTS

ತ್ತಣ್ಣ	Q8ZGS4	RESU
Query Match 59.3%; Score 48; DB 16; Length 480; Best Local Similarity 68.8%; Pred. No. 8.6; Matches 11; Conservative 1; Mismatches 4; Indels 0; Gaps 0;	8ZGS4 PRELIMINARY; PRT; 480 AA.  8ZGS4;  1-MAR-2002 (TrEMBLrel. 20, Last sequence update)  1-MAR-2002 (TrEMBLrel. 21, Last annotation updat  1-JUN-2002 (TrEMBLrel. 21, Last annotation updat  ARTA OR YPO1207.  ARTA OR YPO1207.  ARTA OR YPO1207.  PERSTAIL PESTIS.  1	RESULT 1

QΥ

w

EKTPLTTAAXAPVVXN 18

```
RESULT
076672
ID 076672
ID 07
AC 07
DT 01
DT 01
DT 01
DT 02
CC CC
OC RH
OC RN ([]
RP SI
                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ър
"Direct Selection of IS903 Transposon Insertions by Use of a Host-Range Vector: Isolation of Catalase-Deficient Mutants of Actinobacillus actinomycetemcomitans.";

J. Bacteriol. 181:7298-7307(1999).
                                                                                                                                                                                                                                           Q9RG14;
Q9RG14;
                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-DEC-2001 (TrEMBLrel. 19, Catalase (EC 1.11!1.6).
                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF078784; AAK18967.1; -. Hypothetical protein.
SEQUENCE 458 A.A.
                                                     Thomson V.J., Bhattacharjee M.K., Figurski D.H.;
                                                                        MEDLINE=20042351; PubMed=10572134;
                                                                                        STRAIN=Y4NAL;
                                                                                                 SEQUENCE FROM N.A.
                                                                                                                         NCBI_TaxID=714;
                                                                                                                                     Actinobacillus.
                                                                                                                                              Bacteria; Proteobacteria;
                                                                                                                                                           actinomycetemcomitans)
                                                                                                                                                                    Actinobacillus actinomycetemcomitans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE .....;
STRAIN-BRISTOL.N2;
Latreille P., Wamsley P., O'Brien
"The sequence of C. elegans cosmic"
The sequence of C. elegans cosmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             076672
076672;
01-NOV-1998
01-JUN-2001
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U1-NOV-1998 (TrEMBLrel. 08, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Hypothetical 47.3 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=BRISTOL N2;
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Nemato Rhabditidae; Peloderinae; NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                  386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      None;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                   KTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                             KTPLTSGSSARVINNA 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KKKGLTTAAGAPVVDN
                                                                                                                                                                                                                                                                                                                                                           Similarity
9; Conser
                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nematoda; Chromadorea; rinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                   56.8%;
56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19
                                                                                                                                             gamma subdivision;
                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                 Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cosmid H34I24.";
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                  2AF5BC94EDA0C324 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                            Fine D.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D.;
                                                                                                                                                                                                                                                    484
                                                                                                                                                                    (Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        458
                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                    ÀΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AΑ
                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rhabditida; Rhabditoidea;
                                                           Derbyshire
                                                                                                                                           Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                    databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                           Length 458;
                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Consortium.";
                                                           Х.М.,
                                                                                                                                                                                                                                                                                                                                                     0;
                                    Broad
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                   0;
```

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Complete genome sequence of a muenterica serovar Typhi CT18.";
Nature 413:848-852(2601).
EMBL: AE008876; AAL22651.1;
EMBL: AL627280; CAD03201.1;
InterPro: IPR002173; PfkB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
    Pfam; PF00294; pfkB;
Kinase; Transferase;
SEQUENCE 306 AA;
                                                                                                                                   Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain CChurcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M., Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Kroch A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8XGW5
Q8XGW5;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
                                                                                                                               Whitehead S., Barrell B.G.;
                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
SPECIES-S.typhi; STRAIN-CT18;
MEDLINE-21534947; PubMed=11677608;
                                                                                                                                                                                                                                                                                                                                  McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES=S.typhimurium; STRAIN=LT2 / MEDLINE=21534948; PubMed=11677609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STM3793 OR STY3989.
Salmonella typhimurium,
                                                                                                                                                                                                                                                                                                   Nature 413:852-856(2001).
                                                                                                                                                                                                                                                                                                                     "Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro: IPR002226; Catalase, Pfam; PF00199; Catalase; 1.
PRANTS; PR00067; CATALASE.
PRODOM; PD000510; Catalase; 1.
PROSITE; PS00437; CATALASE_1, 1.
PROSITE; PS00438; CATALASE_2, 1.
PROSITE; PS00438; CATALASE_2, 1.
Heme; Hydrogen peroxide; Iron; Oxidoreductase; Peroxidase.
SEQUENCE 484 AA; 54961 MW; D0E523AB2557D8CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Salmonella typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                carbohydrate kinase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Putative sugar kinase, ribokinase family (EC 2.7.1.15)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF162654; AAF17882.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SERVES TO PROTECT CELLS FROM PEROXIDE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- FUNCTION: OCCURS IN ALMOST ALL AEROBICALLY RESPIRING ORGANISMS SERVES TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7 LTTAAXAPVVXN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P42321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2CAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
; Hypothetical protein; Complete proteome. 33229 MW; 142A0289E2D1B953 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20,
20,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gamma subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H(2)O(2) =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 45;
Pred. No.
                                                                                                            multiple drug resistant Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                     SGSC1412 / ATCC 700720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O(2) + 2 H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Putative
                                                                                                                                                                                                            Wain J.
hia M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                          <u>ر</u>ا.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Gaps

0;

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 8
                                  SEQUENCE FROM N.A.

Yamada K., Liu S.X., Pham P.K., Banh J., Dale J.M., Goldsmith A.D.,

Yamada K., Lie J.M., Onodera C.S., Quach H.L., Tang C., Toriumi M.,

Yamamura Y., Yu G., Yu S., BowSer L., Carninci P., Chen H., Cheuk R.,

Yamamira Y., Tishida J., Jones T., Kamiya A., Karlin-Neumann G.,

Kawai J., Kim C., Koesema E., Lam B., Lin J., Meyers M.C., Miranda M.,

Narusaka M., Nguyen M., Palm C.J., Sakurai T., Satou M., Seki M.,

Shinn P., Southwick A., Tracy S.E., Shinozaki K., Davis R.W.,

Ecker J.R., Theologis A.;
                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                  094A00,
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence up
01-DEC-2001 (TrEMBLrel. 19, Last annotation
Hypothetical 46.8 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9AI19;
01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence up
01-JUN-2002 (TrEMBLrel. 21, Last annotation
Hypothetical 34.4 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q94AQ0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=21101044; PubMed=11159989;
Laliou1 L., Le Bouguenec C.C.;
"afa-8 Gene cluster is carried by
the tRNA(Phe) of human and bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical protein.
SEQUENCE 314 AA; 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00294; pfkB; 1.
PRINTS; PR00990; RIBOKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Infect. Immun. 69:937-948(2001).
EMBL; AF286671; AAK27331.1; -.
HSSP; P05054; 1RK2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR002173; PfkB.
InterPro; IPR002139; Ribokinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia. Proteobacteria; gamma subdivision; Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9AI19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     solates."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                          Length cDNA of gene C7A10.390 (GI:4006876).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKVPCTSSGVAPIFVNA 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKVPCTSSGVAPIFVNA 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34415 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.3%;
47.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44; DB:
Pred. No. 26;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>س</u>
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 44; DB;
Pred. No. 25;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2D5F7342C817E3BB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a pathogenicity island inserted into pathogenic Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                        427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         314
                                                                                                                                                                                                                                                                                                                                                                       on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                  P77924
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCOMPAND ACCOMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RE DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local s
Matches 9
Peters M., Heinaru A., Nurk A.; "Plasmid-encoded catalase KatA, the main fluorescens strain Cb36."; FEMS Microbiol. Lett. 200:235-240(2001).
                                                                                                                                                                                                                                                                                                 01-FEB-1997
01-FEB-1997
01-DEC-2001
                                                                             MEDLINE=21318967; PubMed=11425481;
                                                                                                                                                                                                                                                               KATA.
                                                                                                                                                                                                                                                                                                                                                            P77924
P77924;
                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                             NCBI_TaxID=294;
                                                                                                                                                                                                 Bacteria; Proteobacteria;
                                                                                                                                                                                                                    Pseudomonas fluorescens.
Plasmid pAM10.6.
                                                                                                                                                                                                                                                                             Catalase
                                                                                                                                                                                       Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EU Arabidopsis sequencing projesubmitted (MAR-2000) to the EMEMBL; 299707; CAB16794.1; -EMBL; AL161590; CAB80363.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical SEQUENCE 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. Bevan M., Terryn N Chalwatzis N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (DEC-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1998 (TrEMBLrel. 05, Cr. 01-MAY-1999 (TrEMBLrel. 10, La. 01-OCT-2000 (TrEMBLrel. 15, La. Hypothetical 46.8 kDa protein C7A10.390 OR AT4G36970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          023188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             023188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (JUL-2001) to the EMBL; AY045887; AAK76561.1; Hypothetical protein. SEQUENCE 427 AA; 46788 MW
                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 EEKTPLTTAAXAPVV 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEKAEMTTAMQSPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEKAEMTTAMQSPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEKTPLTTAAXAPVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conserv
                                                                                                                                                                                                                                                                               isozyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 60.09; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       udi protein.
427 AA
                                                                                                                                                                                                                                                                                             ' (Tremblrel.
' (Tremblrel.
' (Tremblrel.
                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46800 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54.3%;
60.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46788 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                               02,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽.,
                                                                                                                                                                                                 gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     project;
                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Heijnen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL/GenBank/DDBJ
-.
                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                             subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75ACC8E02D90AE54 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C8B0192D315DAE41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NO .
                                                                                                                                                                                                                                                                                                                                                                   506 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Γ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DΒ
                                      catalase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mewes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                         Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H.₩.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 427;
                                      of Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
```

Schueller C.,

0;

Gaps

0

RESULT O9AI19

U

В S

8 Ş

93

ω

σ

Matches

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DR SQ
RESULT 10
QOPNUI
ID QOPNUI
AC QOPNUI
DT 01-MA
DT 01-MA
DT 01-MA
COS SETUR
GN SOCKA
OC STREE
OC STREE
OC STREE
OC NCBLI
RN [1]
                                                                                                                                                                                                            QУ
                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                   SEQUENCE FROM .....
STRAIN-MAASTRICHT;

MEDLINE-20473137; PubMed=11018281;

MEDLINE-20473137; PubMed=11018281;

MEDLINE-20473137; PubMed=11018281;

Trait cytomegalovirus R89 is a highly conserved gett getter transcript.";

RI cytomegalovirus R89 is a highly conserved gett gpliced transcript.";

RI virus Res. 69:119-130(2000).

RI Virus Res. 69:119-130(2000).

RI Virus Res. 69:119-130(2000).

RI Virus Res. 69:119-130(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                    Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pfam; PF00199; catalase; 1.
PRINTS; PR00067; CATALASE.
ProDom; PD000510; Catalase; 1.
PROSITE; PS00438; CATALASE_2;
Plasmid.
Plasmid.
For ab. 57324 MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U72068; AAB17009.1;
HSSP; P42321; 2CAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9DWH8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9DWH8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=MAASTRICHT;

MEDLINE=20366325; PubMed=10906222;

Wink C., Beuken E., Bruggeman C.A.;

"Complete DNA sequence of the rat cytomegalovirus
J. Virol. 74:7656-7665(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rat cytomegalovirus (strain Maastricht)
Viruses; dsDNA viruses, no RNA stage; H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses; dsDNA viruses,
Betaherpesvirinae; Muro
                                                                                Q9RNU2;
01-MAY-2000
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=79700;
                                                              ol-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update
Serum opacity factor precursor (Fragment).
SOF4470
 Streptococcaceae;
NCBI_TaxID=1314;
[1]
                                  Streptococcus pyogenes.
Bacteria; Firmicutes; Bacillus/Clostridium
                                                                                                                               Q9RNU2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                          SOF4470
                                                                                                                                                                                         570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                              N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THLTTEAGAPVVDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TPLTTAAXAPVVXN
                                                                                                                                                                                        EERRELTTAGSAPV
                                                                                                                                                                                                             EEKTPLTTAAXAPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                     Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002226;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        506 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                       Conservative
                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muromegalovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57324 MW;
                           Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Catalase
                                                                                                                                                                                                                 15
                                                                                                                                                                                            583
                                                                                                                                                                                                                                                 53.1%;
64.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Created)
, Last sequence up
, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 43;
Pred. No.
                                                                                                                                                                                                                                       Score 43; DB Pred. No. 1.3e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F1EAA728C5D41CBE
                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                       33B6C13DC6A272B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No. 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1240 AA
                                                                                                                                     210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Herpesviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                     DB 12;
1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
on update)
                                                                                                                                     AΑ
                                      group; Lactobacillales;
                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 506
                                                                                                                                                                                                                                                                                                                                   Vink
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                               Length 1240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                      genome.";
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                      C.;
which
                                                                                                                                                                                                                                                                                                                                       expresses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                               0
```

```
RESULT
Q9FT45
ID Q5
AC Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
Q9X6X8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                Вp
                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-4470-96; TISSUE-BLOOD;
Beall B., Gherardi G., Lovgren M., Tyrrell G., Facklam
Predictions of M serotype, anti-opacity factor type, a
Predictions of M serotype, anti-opacity factor type, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Signal.
                                                                on MAK-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
Hypothetical 48.1 kDa protein.
T25B15_140.
Arabian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9X6X8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1999 (TrEMBLrel. 12,
01-NOV-1999 (TrEMBLrel. 12,
01-NOV-1999 (TrEMBLrel. 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal.
NON_TER
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Firmicutes; Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strentococcus (FremBLrel. 12, Last Strentococcus (F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Streptococcaceae;
NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-SS1401 TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "The relation of Streptococcus pyogenes sof and emm
types to genetically distinct strain sets.";
Submitted (MAY 1999) to the EMBL/GenBank/DDBJ databa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Beall B., Gherardi
    Arabidopsis thaliana (Mouse-ear cress).
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core ex
Spermatophyta; Magnoliophyta; eudicotyledons; core ex
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                                98
                                                                                                                                                                                                                                                                                                                       2 EEKTPLTTAAXAP 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EEKTPLTTAAXAPV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEKTPKTVTSSTPV 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tted (AUG-1999) to the EMBL/GenBank/DDBJ databases AF179217; AAD55775.1; -.
                                                                                                                                                                                                                                                                                                   EEKTPKTATSSAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF154330; AAD36988.1;
                                                                                                                                                                                                                                                                                                                                                                           l Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
<1
8
210
210 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          211 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
<1
9
211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pyogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7
>210
210
21220 N
                                                                                                                                                                                                                                                                                                                                                                                                                                          1
8
>211
211
21367 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PT1658;
                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                  51.9%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;

    Mismatches

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence up
Last annotation
sor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SERUM OPACITY FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                  Score 42;
pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SERUM OPACITY FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199C89EECF260B6A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              F5475DDC6A084FE6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
38;
                                                                                                                                                                                                                                                                                                                                                                                                        ДВ
38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΑĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group; Lactobacillales;
                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 210;
                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sof gene
                                   eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   m R., Forwick
and highly
                                                        Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT
OPERING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

STRAIN=A3(2) / M145;

Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,
Thomson N.R., James K.D., Harris D.E., Quail M.A., Kleser H.,
Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,
Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
Huang C.-H., Kleser T., Larke L., Murphy L., Oliver K., O'Neil S.,
Rabbinowlisch E., Rajandream M.A., Rutherford K., Rutter S.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares S., Taylor K.,
Segger K., Saunders D., Sharp S., Squares S., Taylor K.,
Segger K., Squares S., Taylor K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                            Redenbach M., Kieser H.M., Denapaite D., Eichner A., Kinashi H., Hopwood D.A.;
"A set of ordered cosmids and a detailed genetic and the 8 Mb Streptomyces coelicolor A3(2) chromosome.", mol. Microbiol. 21:77-96(1996).
"Complete genome sequence coelicolor A3(2).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-97000351; PubMed-8843436;
Redenbach M., Kleser H.M., Denapaite D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-2000 (TrEMBLrel. 13, Last seque 01-JUN-2002 (TrEMBLrel. 21, Last annot Catalase (EC 1.11.1.6).

KATA OR SC00379 OR SCF62.05.

Streptomyces coelicolor.

Bacteria: Firmicutes; Actinobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=A3(2);
Thomson N.R., Parkhill J., I
Submitted (OCT-1999) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murphy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9RJK9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9RJK9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000782; BIgH3_fasciclin. InterPro; IPR000903; Nmt. Pftam; PF02469; Fasciclin; 1. PROSTTE; PS00976; NMT_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hypothetical protein. SEQUENCE 436 AA; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EU Arabidopsis sequencing pr
Submitted (SEP-2000) to the
EMBL; AL132972; CAC07928 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (NOV-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM Alcaraz J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 50.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EEKTPVEKKTGVPVVKKA 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEKTPLTTAAXAPVVXNA 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (OCT-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P., Clabault G., Cottet A., Mache R., Mewes H
Mayer K.F.X., Quetier F., Salanoubat M.;
(NOV-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptomycineae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48073 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13,
13,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Barrell B.G., Rajandream M.A.
e EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       project;
he EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 42; DB 1
Pred. No. 74;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83FD94879F9855DF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ria; Actinobacteridae;
Streptomycetaceae; Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mewes H.W.,
M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                               physical map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cullum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rudd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT
Q54272
ID Q5
AC Q5
DT 01
DT 01
DT 01
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                       ATO DE REPORTE DE REPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
Q9SE04
                                                                                                                                                                                                                                                                              Query Match
Best Local s
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
        Q54272
Q54272;
Q1-NOV-1996
Q1-NOV-1996
Q1-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interpro; IPR002226; Catalase.

pfam; PF00199; Catalase; 1

PRINTS; PR00067; CATALASE.

ProDom; PD000510; Catalase; 1.

PROSITE; PS00437; CATALASE_1; 1.

PROSITE; PS00438; CATALASE_2; 1.

Heme; Hydrogen peroxide; Iron; Oxi
SEQUENCE 487 AA; 55116 MW; 9D3
                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
Pfam; PFO(
                                                                                                                                                                                                                                                                                                                                                                                                                    Copper chaperone from Oryza Submitted (OCT-1999) to the EMBL; AF198626; AAF15285.1; HSSP; O00244; IFEO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2000 (TrEMBLrel. 20, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Copper chaperone homolog CCH.
Copper sativa (Rice)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoldeae; Oryzaae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
Mira H., Penarrubi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-98369102; PubMed-9701579; MEDLINE-98369102; PubMed-9701579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Himelblau E.,
Amasino R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Identification of a functional homolog of the homeostasis gene ATX1 from Arabidopsis.";
                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9SE04;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9SE04
                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature 417:141-147(2002).

-!- FUNCTION: OCCURS IN ALMOST ALL AEROBICALLY RESPIRING ORGANISMS SERVES TO PROTECT CELLS FROM THE TOXIC EFFECTS OF HYDROGEN PEROXIDE (BY SIMILARITY).

-!- CATALYTIC ACTIVITY: 2 H(2)O(2) - O(2) + 2 H(2)O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AL121855; CAB58320.1;
HSSP; P42321; 2CAE.
                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                               EEKTPLTTAAXAPVVXNA
                                                                                                                                                                                           EAAPPTTTAAEAPAIAAA 114
                                                                                                                                                                                                                                                                                                                                                                   PF00403;
NCE 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Physiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLTTVAGAPVPDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLTTAAXAPVVXN
                                                                                                                                                                                                                                                                                  Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Penarrubia
                                                                                                                                                                                                                                                                                                                                                                                                IPR001934; HeavyMe_transpt.
      (TrEMBLrel. 01, (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene ATX1 from Arabidop
ol. 117:1227-1234(1998).
                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                   HMA;
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                               ia L.;
from Oryza sativa.";
99) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                            13094 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                             50.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51.9%;
                                                                                                                                                                                                                                        19
Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                                                       Score 41; DB Pred. No. 37; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred
                                                                                                                                                                                                                                                                                                                                                     7176EF95350A8231 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oxidoreductase; Peroxidase.
9D3334889EAF60B7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Culotta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42;
No.
                                                                                       417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   132 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     V.C.,
                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           yeast copper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Penarrubia L.,
                                                                                                                                                                                                                                                                                                             Length 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 487
                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

update)

update)

```
Search completed: March 14, 2003, 09:12:27 Job time : 33 secs
                                                                                                                                                                                   Qy
                                                                                                                          Db
                                                                                                                                                                                                                                           Query Match 50.6%; Score 41; DB 2; Best Local Similarity 52.9%; Pred. No. 1e+02; Matches 9; Conservative 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                   -i- PATHMAY: BIALAPHOS BIOSYNTHESIS.
-i- SIMILARITY: BELONGS TO THE ALDEHYDE DEHYDROGENASES FAMILY.
EMBL: D3787; BA007116.1; -.
HSSP; P56533; 1445. |
InterPro: IPR002086; Aldehyde_dehydr.
Pf00171; aldedh; 1.
PROSITE; PS00687; ALDEHYDE_DEHYDR_GLU; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. STRAIN-SF1293;
STRAIN-SF1293;
STRAIN-SF1293;
Hidaka T., Hidaka M., Kuzuyama T., Seto H.;
Hidaka T., Hidaka M., Kuzuyama T., Seto H.;
"Sequence of a p-methyltransferase-encoding gene isolated from a bialaphos-producing Streptomyces hygroscopicus.";
Gene 158:149-150(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Streptomyces hygroscopicus.

Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.

NCBI_TaxID=1912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical aldehyde-dehydrogenase like 43.4 kDa protein (EC 1.2.1.-).
                                                                                                                       3 EKTPLITAAXAPVVXNA 19
|||||| | | :: |
117 EKTPLTALAFAELL|EA 133
                                                                                                                                                                                                                                                                   6; Indels
                                                                                                                                                                                                                                                                                                                        Length 417;
                                                                                                                                                                                                                                                                      0; Gaps
                                                                                                                                                                                                                                                                             0;
```

Page 6